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United States
Department of
Agriculture

Soil
Conservation
Service

Spokane,
Washington



in cooperation with

Department of Ecology
State of Washington

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Water Supply Outlook for Washington

as of MARCH 1, 1981 . . .



TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SNOW SURVEYORS MAKING SPECIAL MEASUREMENTS OF THE
SNOWPACK NEAR MT. ST. HELENS VOLCANO, WASHINGTON, APRIL, 1980.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

NORMAN A. BERG
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D C



Released by

LYNN A. BROWN
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
SPOKANE, WASHINGTON

In Cooperation with

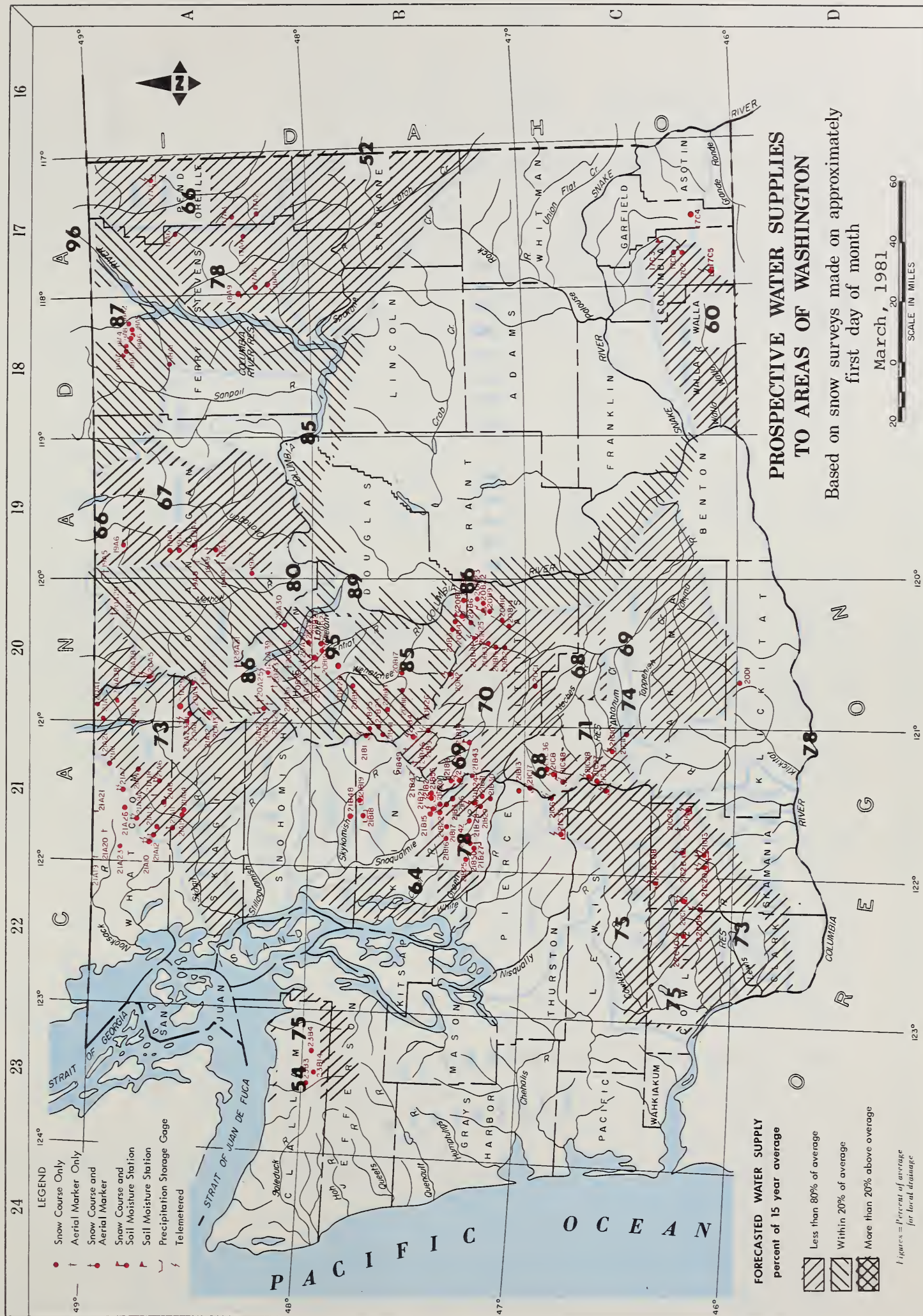
DONALD W. MOOS
DIRECTOR
DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON



Report prepared by

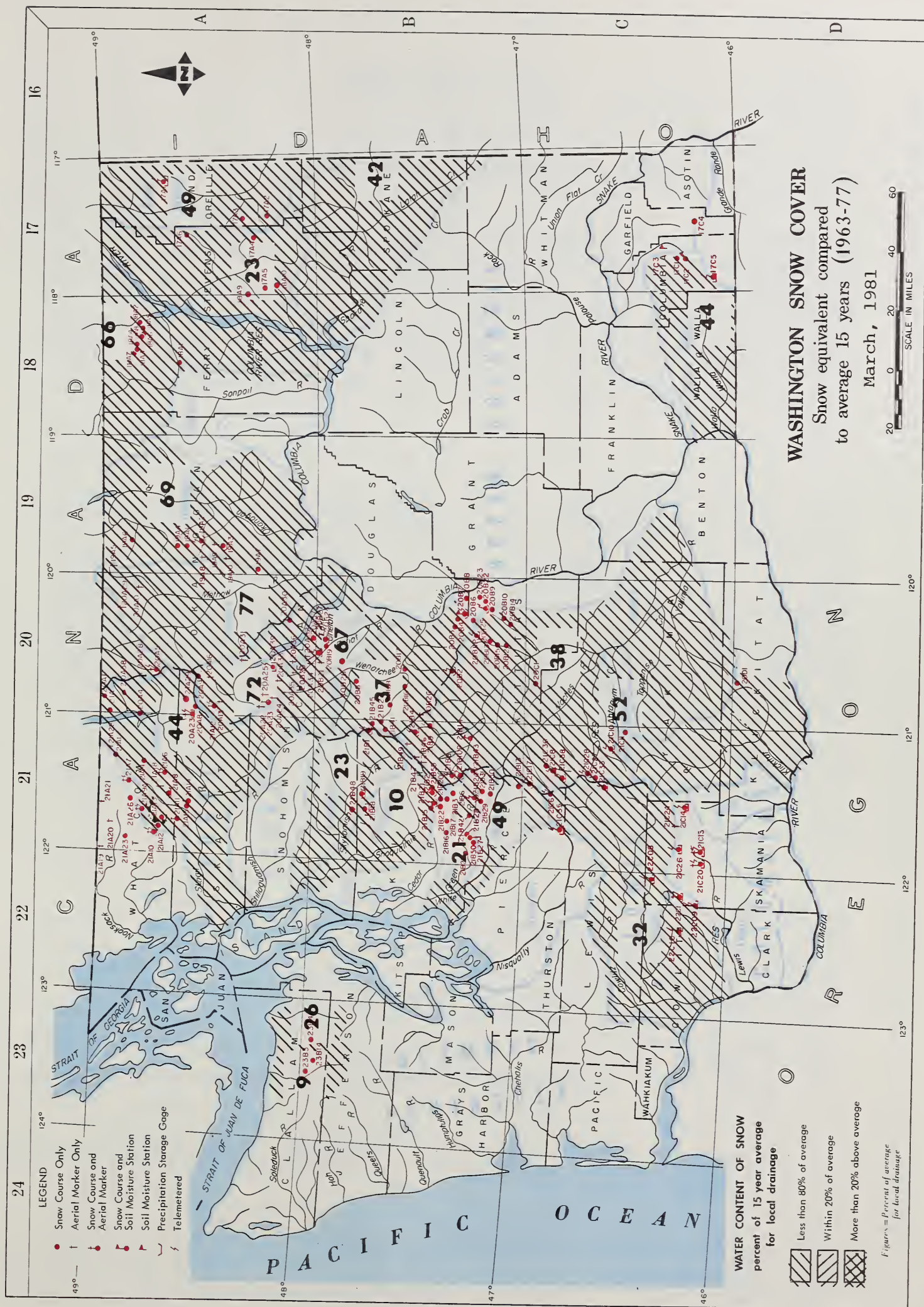
ROBERT T. DAVIS, Snow Survey Supervisor
JAMES K. MARRON, Assistant Snow Survey Supervisor
DONALD R. EASTLUND, Hydrologic Technician
NORINE P. KENT, Statistical Assistant

SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE																							
NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.												
Pend Oreille River																							
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek Upper	20B22	11	20N	20E	5300												
Bunchgrass Meadow	1A15P	24	37N	44E	5000	Colockum Creek Lower	20B23	1	20N	20E	4300												
Winchester Creek	17A3	30	33N	43E	2970	Squilehuck Creek						21C26SP	8	9N	7E	3800							
Kettle River						Beehive Springs	20B3	12	21N	19E	4400	22C09SP	26	8N	5E	3200							
Boulder Road	18A2	36	39N	36E	1450	Scout-A-Vision	20B4	18	21N	20E	3400	22C13P	35	9N	5E	4400							
Butte Creek	18A3	28	39N	35E	4070	Stemilt Creek						21C20SP	16	8N	7E	3400							
Cabin Creek	18A8	5	38N	36E	3170	Jump-Off	20B8	34	21N	20E	4450	21C13SP	14	7N	8E	4250							
Goat Creek	18A4	26	39N	35E	3595	Upper Slide	20B6	30	21N	20E	5000	Cowlitz River											
Snow Caps Creek	18A5	3	38N	36E	2150	Upper Wheeler	20B7SP	30	21N	20E	4400	21C6	15	16N	10E	5300							
Snow Caps Trail	18A6	5	38N	36E	2720	Yakima River						21C33SP	11	13N	11E	5900							
Summit G. S.	18A7	20	39N	35E	4600	Altianum R. S.	21C11	24	12N	14E	3100	21C14SP	36	10N	10E	4500							
Colville River						Big Boulder Creek	21B9SP	35	23N	14E	3200	22C08SP	9	10N	6E	3280							
Baird	17A6	19	36N	42E	3215	Bumping Lake	21C8P	23	16N	12E	3450	22C10SP	12	8N	4E	4920							
Carlson	18A9	34	32N	38E	2885	Bumping Lake New	21C36	13	16N	12E	3400	Baker River											
Chewelah	17A4	11	32N	41E	4925	Bumping Ridge	21C38SP	9	15N	12E	4600	21A11A	8	36N	8E	3800							
Stranger Mountain	17A5	26	31N	38E	4990	Colockum Pass	20B9	25	20N	20E	5370	21A7A	17	39N	11E	5200							
Togo	18A10	6	29N	38E	3370	Cooke Creek	20B10	17	19N	20E	4123	21A6A	23	38N	8E	3600							
Sanpoil River						Green Lake	21B4SP	28	24N	14E	3371	21A18a	27	38N	10E	5800							
Sherman Creek, Pass	18A1	19	36N	35E	5350	Grouse Camp	21C10SP	3	12N	13E	6000	21A12AP	20	37N	8E	2100							
Okanogan River						High Creek	20B11 SP	29	21N	19E	5385	21A10A†	18	37N	8E	3400							
Clark	19A8a	2	36N	23E	7000	Joe Luke	20B12	34	20N	19E	2930	S. F. Thunder Creek	21A14A	20	36N	9E	2200						
Muckamuck	19A9a	20	36N	24E	6750	Lake Cle Elum	21B46a	22	23N	12E	4624	Sulphur Creek	21A13	22	37N	8E	1600						
Mutton Creek No. 1	19A1	30	37N	24E	5700	Lemah Creek	21B14M	15	20N	14E	2200	Three Mile Creek	21A15	18	36N	9E	1600						
Mutton Creek No. 2	19A4	19	37N	24E	6000	Monastash	20C1	24	17N	16E	3935	Watson Lakes	21A8P	25	37N	9E	4500						
Paysayten	20A28a	32	40N	18E	4300	Morse Lake	21C17SP	6	16N	11E	5400	Hooksock River											
Rusty Creek	19A3P	18	35N	24E	4000	Nanum	20B13	4	20N	19E	3875	Bald Mountain	21A19a	7	40N	7E	4400						
Salmon Meadows	19A2SP	33	37N	24E	4500	Trail Creek	20B14	20	19N	20E	3360	Canyon	21A20A	20	40N	8E	5100						
Strawberry Mtn.	19A10a	15	35N	23E	6750	Tunnel Avenue	21B8P	13	23N	11E	2450	Glacier Creek	21A23	9-10	38N	7E	3700						
Tout's Coulee	19A6	30	39N	25E	2845	Van Epps Pass	20B26a	16	23N	15E	5925	Panorama New	21A26	17	39N	9E	4300						
Methow River						Walters Flat	20B15	22	20N	19E	3360	Twin Lakes	21A21a	16	40N	9E	5200						
Billy Goat Pass	20A10a	10	38N	20E	6400	White Pass (East Side)	21B49a	12	23N	13E	3024	OLYMPIC PENINSULA											
Dollar Watch	20A29a	8	39N	20E	7000	LOWER COLUMBIA DRAINAGE						Dungeness River											
Harris Pass	20A5SP	7	37N	18E	6500	Asotin Creek						2384	1	28N	5W	5200							
Horseshoe Basin	19A5a	15	40N	23E	7000	Spruce Springs	17C4	9	8N	40E	5700	Morse Creek											
Loup Loup	19A7	36	34N	23E	4650	Touchet River						Cox Valley	23814	31	29N	6W	4500						
Chelan Lake Basin						Cause	17C3m	2	9N	40E	3370	Elwha River											
Cloudy Pass	20A22a	12	31N	15E	6500	Homestead	17C1	11	9N	40E	4030	2383	36	29N	7W	4500							
Greenwood Flat	20A25a	3	31N	16E	5275	Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400	LEGEND											
Little Meadows	20A24a	8	31N	16E	5900	Touchet No. 2	17C5SP	6	7N	40E	5530	21A7	Snow Course Only										
Lyman Lake	20A23SP	18	31N	16E	5900	Klickitat River						21A7a	Aerial Marker Only										
Park Creek Flat	20A13a	19	34N	16E	2220	20D1	21	6N	17E	4030	21A7b	Snow Course And Aerial Marker											
Park Creek Ridge	20A12SP	18	34N	16E	4600	Satus Pass	20D1	21	6N	17E	4030	21A7c	Snow Course And Aerial Marker										
Petersons	20A16a	21	35N	17E	3730	Wenatchee River						21A7d	Snow Course And Aerial Marker										
Rainy Pass	20A9SP	32	31N	20E	6300	21B23	7	26N	15E	3170	21B41SP	13	26N	14E	3240	21A7e	Snow Course And Aerial Marker						
Safety Harbor	20A30a	32	31N	20E	6300	21B45P	35	22N	17E	4270	20B2 SP	35	22N	17E	4270	21A7f	Snow Course And Aerial Marker						
War Creek Pass	20A31a	34	33N	18E	6500	Blewett Pass No. 2	20B2 SP	35	22N	17E	4270	20B16	4	25N	17E	1810	21A7g	Snow Course And Aerial Marker					
Mirror Lake	20A39	30	31N	18E	5600	Chiwaikum G. S.	20B16	4	25N	17E	1810	20B17	5	25N	17E	1970	21A7h	Snow Course And Aerial Marker					
Entiat River						Lake eratchee	20B5	33	27N	17E	1970	20B18	1	24N	17E	1127	21A7i	Snow Course And Aerial Marker					
Blue Creek G. S.	20B28a	19	28N	18E	5425	Leavenworth R. S.	20B17	1	24N	17E	1127	20B18	4	26N	16E	2140	21A7j	Snow Course And Aerial Marker					
Brief	20B19	34	28N	19E	1600	Merritt	20B18	1	24N	17E	1127	21B15P	14	26N	13E	4070	21A7k	Snow Course And Aerial Marker					
Entiat Meadows	20A33a	28	31N	17E	4540	Stevens Pass	21B15P	14	26N	13E	4070	21B45	12	26N	19E	3700	21A7l	Snow Course And Aerial Marker					
Entiat River Trail	20A34a	2	29N	17E	3325	Stevens Pass Sand Shed	21B45	12	26N	19E	3700	20B25SP	10	20N	20E	5310	21A7m	Snow Course And Aerial Marker					
Four Mile Ridge	20B27a	15	28N	19E	6800	Trough 2	20B25SP	10	20N	20E	5310							21A7n	Snow Course And Aerial Marker				
Fox Camp	20A36a	17	30N	18E	6510													21A7p	Snow Course And Aerial Marker				
Pope Ridge	20B20	22	29N	18E	6510													21A7q	Snow Course And Aerial Marker				
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	6510													21A7r	Snow Course And Aerial Marker				
Pugh Ridge	20A32a	34	30N	18E	6725													21A7s	Snow Course And Aerial Marker				
Shady Pass	20A37	20	29N	19E	6200													21A7t	Snow Course And Aerial Marker				
Snow Brushy	20A39	30	31N	18E	5600													21A7u	Snow Course And Aerial Marker				
Tommy Creek	20B21a	21	30N	17E	3910													21A7v	Snow Course And Aerial Marker				
																		21A7w	Snow Course And Aerial Marker				



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UPPER COLUMBIA DRAINAGE											
NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.
Pend Oreille River											
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek					
Bunchgrass Meadow	1A1SP	24	37N	44E	5000	Colockum Creek Upper	20822	11	20N	20E	5300
Winchester Creek	17A3	30	33N	43E	2970	Colockum Creek Lower	20823	1	20N	20E	4300
Kettle River											
Squilehuck Creek						Stemilt Creek					
Boulder Road	18A2	36	39N	36E	1450	Beehive Springs	2083	12	21N	19E	4400
Butte Creek	18A3	28	39N	35E	4070	Scout-A-Vista	2084	18	21N	20E	3400
Cabin Creek	18A8	5	38N	36E	3170	Stemilt Creek					
Coat Creek	18A4	26	39N	35E	3595	Jump-Off	2088	34	21N	20E	4450
Snow Caps Creek	18A5	3	38N	36E	2150	Stemilt Slide	2086	30	21N	20E	5000
Snow Caps Trail	18A6	5	38N	36E	2720	Upper Wheeler	2087SP	30	21N	20E	4400
Summit G. S.	18A7	20	39N	35E	4600	Yakima River					
Colville River											
Baird	17A6	19	36N	42E	3215	21C11	24	12N	14E	3100	
Carlson	18A9	34	32N	38E	2885	21B9SP	35	23N	14E	3200	
Chewelah	17A4	11	32N	41E	4925	21C8P	23	16N	12E	3450	
Stranger Mountain	17A5	26	31N	38E	4990	Bumping Lake New	21C36	13	16N	12E	3450
Toga	18A10	6	29N	38E	3370	Bumping Ridge	21C38SP	9	15N	12E	4600
Sanpall River											
Sherman Creek Pass	18A1	19	36N	35E	5350	Colockum Pass	2089	25	20N	20E	5370
Okanogan River											
Clark	19A8a	2	36N	23E	7000	Cooke Creek	20810	17	19N	20E	4123
Muckamuck	19A9a	20	36N	24E	6750	Fish Lake	21B4SP	28	24N	14E	3371
Mullan Creek No. 1	19A1	30	37N	24E	5700	Green Lake	21C10SP	3	12N	13E	6000
Mullan Creek No. 2	19A4	19	37N	24E	6000	Grouse Comp	20811SP	29	21N	19E	5385
Paysayten	20A28a	32	40N	18E	4300	High Creek	20812	34	20N	19E	2930
Rusty Creek	19A3P	18	35N	24E	4000	Lake Cle Elum	21B14M	7	23N	14E	4624
Salmon Meadows	19A2SP	33	37N	24E	4500	Lemah Creek	20C1	24	17N	16E	3327
Stratvian Min.	19A10a	15	35N	23E	6750	Morse Lake	21C17SP	6	16N	11E	5400
Touts Coulee	19A6	30	39N	25E	2845	Nonum	20813	4	20N	19E	3875
Methow River											
Billy Goat Pass	20A10a	10	38N	20E	6400	Trail Creek	20814	20	19N	20E	3360
Dollar Watch	20A26a	8	39N	20E	7000	Tunnel Avenue	21B8P	13	21N	11E	2450
Harts Pass	20A5SP	7	37N	18E	6500	Van Epps Pass	20826a	16	23N	15E	5925
Horseshoe Basin	19A5a	15	40N	23E	7000	Walters Flat	20815	22	20N	19E	3360
Loup Loup	19A7	36	34N	23E	4650	Wapitus Lake	21B49a	12	23N	13E	3024
Chelan Lake Basin											
Cloudy Pass	20A22a	12	31N	15E	6500	White Pass (East Side)	21C28SP	2	13N	11E	4500
Greenwood Flat	20A25a	3	31N	16E	3540	LOWER COLUMBIA DRAINAGE					
Little Meadows	20A24a	8	31N	16E	5275	Asotin Creek					
Lynan Lake	20A23SP	18	31N	16E	5900	Spruce Springs					
Park Creek Flat	20A13a	19	34N	16E	2220	17C4	9	8N	40E	5700	
Park Creek Ridge	20A12SP	18	34N	16E	4600	Touchet River					
Petersens	20A16a	3	34N	17E	3730	Couse					
Rainy Pass	20A9SP	32	31N	17E	4780	Homestead	17C3m	2	9N	40E	3370
Safety Harbor	20A30a	32	31N	20E	6300	Martin Springs (Helmers SM)	17C1	11	9N	40E	4030
War Creek Pass	20A31a	34	33N	18E	6500	Touchet No. 2	17C2M	23	9N	40E	4400
Mirror Lake	20A39	30	31N	18E	5600	Touchet No. 2					
Entiat River											
Blue Creek G. S.	20828a	19	28N	18E	5425	Spruce Springs	17C4	9	8N	40E	5700
Brief	20819	34	28N	19E	1600	Asotin Creek					
Entiat Meadows	20A33a	28	31N	17E	4540	Spruce Springs					
Entiat River Trail	20A34a	2	29N	17E	3325	17C4	9	8N	40E	5700	
Four Mile Ridge	20827a	15	28N	19E	6800	Touchet River					
Fox Camp	20A36a	17	30N	18E	6510	Couse					
Pope Ridge	20820	22	29N	18E	3540	Homestead	17C3m	2	9N	40E	3370
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540	Martin Springs (Helmers SM)	17C1	11	9N	40E	4030
Pugh Ridge	20A32a	34	30N	18E	6725	Touchet No. 2	17C2M	23	9N	40E	4400
Shady Pass	20A37	20	29N	19E	6200	Touchet No. 2					
Snow Brushy	20A35a	21	30N	17E	3910	Touchet No. 2					
Tammy Creek	20821a	10	28N	18E	4900	Touchet No. 2					
Wenatchee River											
Berne-Mill Creek	21B23	7	26N	15E	3170	Couse	17C3m	2	9N	40E	3370
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	Homestead	17C1	11	9N	40E	4030
Blower Pass No. 2	20825P	35	22N	17E	4270	Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Chiwaukum G. S.	20816	4	25N	17E	1810	Touchet No. 2	17C5SP	6	7N	40E	5530
Lake Wenatchee	2085	33	27N	17E	1970	Klickitat River					
Leavenworth R. S.	20817	1	24N	17E	1127	Klickitat River					
Merritt	20818	4	26N	16E	2140	Klickitat River					
Sievens Pass	21B15P	14	26N	13E	4070	Klickitat River					
Sievens Pass Sand Shed	21B45	12	26N	19E	3700	Klickitat River					
Trough #2	208255P	10	20N	20E	5310	Klickitat River					

UPPER COLUMBIA DRAINAGE											
NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.
Pend Oreille River											
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek					
Bunchgrass Meadow	1A1SP	24	37N	44E	5000	Colockum Creek Upper	20822	11	20N	20E	5300
Winchester Creek	17A3	30	33N	43E	2970	Colockum Creek Lower	20823	1	20N	20E	4300
Kettle River											
Squilehuck Creek						Stemilt Creek					
Boulder Road	18A2	36	39N	36E	1450	Beehive Springs	2083	12	21N	19E	4400
Butte Creek	18A3	28	39N	35E	4070	Scout-A-Vista	2084	18	21N	20E	3400
Cabin Creek	18A8	5	38N	36E	3170	Stemilt Creek					
Coat Creek	18A4	26	39N	35E	3595	Jump-Off	2088	34	21N	20E	4450
Snow Caps Creek	18A5	3	38N	36E	2150	Stemilt Slide	2086	30	21N	20E	5000
Snow Caps Trail	18A6	5	38N	36E	2720	Upper Wheeler	2087SP	30	21N	20E	4400
Summit G. S.	18A7	20	39N	35E	4600	Yakima River					
Colville River											
Baird	17A6	19	36N	42E	3215	21C11	24	12N	14E	3100	
Carlson	18A9	34	32N	38E	2885	21B9SP	35	23N	14E	3200	
Chewelah	17A4	11	32N	41E	4925	21C8P	23	16N	12E	3450	
Stranger Mountain	17A5	26	31N	38E	4990	Bumping Lake New	21C36	13	16N	12E	3450
Toga	18A10	6	29N	38E	3370	Bumping Ridge	21C38SP	9	15N	12E	4600
Sanpall River											
Sherman Creek Pass	18A1	19	36N	35E	5350	Colockum Pass	2089	25	20N	20E	5370
Okanogan River											
Clark	19A8a	2	36N	23E	7000	Cooke Creek	20810	17	19N	20E	4123
Muckamuck	19A9a	20	36N	24E	6750	Fish Lake	21B4SP	28	24N	14E	3371
Mullan Creek No. 1	19A1	30	37N	24E	5700	Green Lake	21C10SP	3	12N	13E	6000
Mullan Creek No. 2	19A4	19	37N	24E	6000	Grouse Comp	20811SP	29	21N	19E	5385
Paysayten	20A28a	32	40N	18E	4300	High Creek	20812	34	20N	19E	2930
Rusty Creek	19A3P	18	35N	24E	4000	Lake Cle Elum	21B14M	7	23N	14E	4624
Salmon Meadows	19A2SP	33	37N	24E	4500	Lemah Creek	20C1	24	17N	16E	3327
Stratvian Min.	19A10a	15	35N	23E	6750	Morse Lake	21C17SP	6	16N	11E	5400
Touts Coulee	19A6	30	39N	25E	2845	Nonum	20813	4	20N	19E	3875
Methow River											
Billy Goat Pass	20A10a	10	38N	20E	6400	Trail Creek	20814	20	19N	20E	3360
Dollar Watch	20A26a	8	39N	20E	7000	Tunnel Avenue	21B8P	13	21N	11E	2450
Harts Pass	20A5SP	7	37N	18E	6500	Van Epps Pass	20826a	16	23N	15E	5925
Horseshoe Basin	19A5a	15	40N	23E	7000	Walters Flat	20815	22	20N	19E	3360
Loup Loup	19A7	36	34N	23E	4650	Wapitus Lake	21B49a	12	23N	13E	3024
Chelan Lake Basin											
Cloudy Pass	20A22a	12	31N	15E	6500	White Pass (East Side)	21C28SP	2	13N	11E	4500
Greenwood Flat	20A25a	3	31N	16E	3540	LOWER COLUMBIA DRAINAGE					
Little Meadows	20A24a	8	31N	16E	5275	Asotin Creek					
Lynan Lake	20A23SP	18	31N	16E	5900	Spruce Springs					
Park Creek Flat	20A13a	19	34N	16E	2220	17C4	9	8N	40E	5700	
Park Creek Ridge	20A12SP	18	34N	16E	4600	Touchet River					
Petersens	20A16a	3	34N	17E	3730	Couse					
Rainy Pass	20A9SP	32	31N	17E	4780	Homestead	17C3m	2	9N	40E	3370
Safety Harbor	20A30a	32	31N	20E	6300	Martin Springs (Helmers SM)	17C1	11	9N	40E	4030
War Creek Pass	20A31a	34	33N	18E	6500	Touchet No. 2	17C2M	23	9N	40E	4400
Mirror Lake	20A39	30	31N	18E	5600	Touchet No. 2					
Entiat River											
Blue Creek G. S.	20828a	19	28N	18E	5425	Spruce Springs	17C4	9	8N	40E	5700
Brief	20819	34	28N	19E	1600	Asotin Creek					
Entiat Meadows	20A33a	28	31N	17E	4540	Spruce Springs					
Entiat River Trail	20A34a	2	29N	17E	3325	17C4	9	8N	40E	5700	
Four Mile Ridge	20827a	15	28N	19E	6800	Touchet River					
Fox Camp	20A36a	17	30N	18E	6510	Couse					
Pope Ridge	20820	22	29N	18E	3540	Homestead	17C3m	2	9N	40E	3370
Pope Ridge Snow Pillow	20824SP	22	29N	18E	3540	Martin Springs (Helmers SM)	17C1	11	9N	40E	4030
Pugh Ridge	20A32a	34	30N	18E	6725	Touchet No. 2	17C2M	23	9N	40E	4400
Shady Pass	20A37	20	29N	19E	6200	Touchet No. 2					
Snow Brushy	20A35a	21	30N	17E	3910	Touchet No. 2					
Tammy Creek	20821a	10	28N	18E	4900	Touchet No. 2					
Wenatchee River											
Berne-Mill Creek	21B23	7	26N	15E	3170	Couse	17C3m	2	9N	40E	3370
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	Homestead	17C1	11	9N	40E	4030
Blower Pass No. 2	20825P	35	22N	17E	4270	Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Chiwaukum G. S.	20816	4	25N	17E	1810	Touchet No. 2	17C5SP	6	7N	40E	5530
Lake Wenatchee	2085	33	27N	17E	1970	Klickitat River					
Leavenworth R. S.	20817	1	24N	17E	1127	Klickitat River					
Merritt	20818	4	26N	16E	2140	Klickitat River					
Sievens Pass	21B15P	14	26N	13E	4070	Klickitat River					
Sievens Pass Sand Shed	21B45	12	26N	19E	3700	Klickitat River					
Trough #2	208255P	10	20N	20E	5310	Klickitat River					

UPPER COLUMBIA DRAINAGE											
NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SFC.	TWP.	RANGE	ELEV.
Pend Oreille River											
Boyer Mountain	17A2	7	31N	43E	5250	Colockum Creek					
Bunchgrass Meadow	1A1SP	24	37N	44E	5000	Colockum Creek Upper	20822	11	20N	20E	5300
Winchester Creek	17A3	30	33N	43E	2970	Colockum Creek Lower	20823	1	20N	20E	4300
Kettle River											
Squilehuck Creek						Stemilt Creek					
Boulder Road	18A2	36	39N	36E	1						

OLYMPIC PENINSULA											
Dungeness River											
Deer Park	2384	1	28N	5W	5200						
Morse Creek											
Cox Valley	23814	31	29N	6W	4500						
Elwha River											
Hurricane	2383	36	29N	7W	4500						

Snoqualmie River											
Alpine Meadow	21848	31	27N	9E	3500						
Ollalie Meadows	2182P	19	22N	11E	3625						
South Fork Olali	21818P	26	26N	9E	1900						
Ollalie Meadows East	21855SP	20	22N	11E	8700						
Skykomish River											
Lake Elizabeth	21819P	33	26N	10E	2900						

Green River											
Airstrip	21824P	18	20N	11E	1800						
Charley Creek	21825	27	21N	8E	1200						
Cougar Mountain	218425P	21	21N	9E	3200						
Grass Mountain No. 2	21827	14	20N	8E	2900						
Grass Mountain No. 3	21828	12	20N	8E	2100						
Lester Creek	21829	36	20N	10E	3100						
Lynn Lake	2185C	22	20N	8E	4000						
Sawmill Ridge	21831	5	19N	11E	4700						
Snowshoe Butte	218435P	14	20N	11E	5000						
Stampede Pass	21810 SP	25	21N	11E	3860						
Twin Camp	21830	18	19N	11E	4100						
Cedar River											
City Cabin	2183	10	21N	10E	2390						
Mr. Gardner	21821P	30	22N	10E	3300						
Mr. Gardner Aux.	21822	31	22N	10E	2500						
Mr. Lindsay	21816P	31	22N	9E	2500						
Mr. Washington	21815P	8	22N	9E	3000						
Rex River	21817P	11	21N	9E	2400						
South Fork Cedar	2186P	24	21N	10E	3000						
Tinkham Creek	21820P	1	21N	10E	3400						

LEGEND											
21A7	Snow Course Only										
21A7a	Aerial Marker Only										
21A7b	Snow Course And Aerial Marker										
21A7c	Snow Course And Soil Moisture Station										
21A7d	Soil Moisture Station										
21A7e	Snow Course And Precipitation Storage Gauge										
21A7P	Precipitation Storage Gauge										
21A7SP	Snow Pillow										

PUGET SOUND DRAINAGE					
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
White River					
Carroll Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Caughr Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B5C	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mr. Gardner	21B21P	30	22N	10E	3300
Mr. Gardner Aux.	21B22	31	22N	10E	2500
Mr. Linday	21B16P	31	22N	9E	2500
Mr. Washington	21B15P	8	22N	9E	3000
Rex River	21B17P	11	21N	9E	2400
South Fork Cedar	21B6P	24	21N	10E	3000
Trinkham Creek	21B20P	1	21N	10E	3400
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Ollalie Meadows	21B2P	19	22N	11E	3625
South Fork Tolt	21B18P	26	26N	9E	1900
Ollalie Meadows East	21B55SP	20	22N	11E	8700
Skykomish River					
Lake Elizabeth	21B19P	33	26N	10E	2900

OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500

LEGEND	
21A7	Snow Course Only
21A7a	Aerial Marker Only
21A7b	Snow Course And Aerial Marker
21A7M	Snow Course And Soil Moisture Station
21A7m	Snow Moisture Station
21A7p	Snow Course And Precipitation Storage Gage
21A7B	Precipitation Storage Gage
21A7SP	Snow P-Flow

WATER SUPPLY OUTLOOK

State of Washington

March 1, 1981

The water supply situation has not changed appreciably from that which was reported last month. The forecasts have been reworked and ended up practically the same. The snowpack has generally improved and precipitation was excellent; but this did not help us very much. To the north, in British Columbia, where conditions were better on the first of February; they are still better as of the first of March, but they have deteriorated a small amount. We still expect near normal water supplies from British Columbia, and near adequate water supplies in Washington.

SNOW COVER

When comparing our 1981 snowpack to the past records, we do not have anywhere near a normal situation; but, generally speaking, we have better snowpacks than was experienced in 1977 - our last big drought year. In the Upper Columbia Basin of Washington and tributary areas, the snowpack ranges from 23 percent of normal to a high of 77 percent. These same snowpacks ranged from 11 to 41 percent in 1977. Along the Lower Columbia, the snowpack ranges from 32 to 44 percent this year; with one watershed reporting zero. These same snow courses reported 8 to 14 percent in 1977. On the Puget Sound Drainage, the watersheds have reported a range from zero for the Cedar River to 49 percent of average on the White. In 1977, these watersheds ranged from 4 percent of normal on the Cedar to 44 percent on the Nooksack. A big improvement occurred on the Olympic Peninsula where we now have a snowpack that ranges from 9 to 26 percent of normal. In 1977, the snowpack was 9 to 10 percent.

RESERVOIRS

The one "shining star" in the water supply picture for Washington is the excellent reservoir storage. Our power reservoirs all have well above average amounts of water in storage with Franklin D. Roosevelt Lake, 80 percent above average; Chelan Lake, 86 percent; and Ross Lake, 44 percent. The irrigation reservoirs are, likewise, in excellent shape; with only Lake Cle Elum in the Yakima Drainage reporting a subnormal amount of water in storage. Over all, the irrigation reservoirs have 20 percent greater than average amounts of water in storage. These reservoirs will undoubtedly fill with the spring runoff.

PRECIPITATION

The rainfall picture this past month was another turn around. While January rainfall was all subnormal, February precipitation was well above average. The poorest was the Pend Oreille-Spokane Drainage - only 9 percent above average; while the best was North Central Washington - 95 percent greater. The November through February winter precipitation, as now accumulated and reported by the National Weather Service, ranges near average for all drainage divisions reported for the area. The Columbia Above Castlegar is 3 percent below average; the Pend Oreille-Spokane, 9 percent below; the East Slopes of the Cascades, 16 percent above; and the rest, between these figures.

STREAMFLOW

River flows continue to be above average. As reported by the U. S. Geological Survey, only the Pend Oreille as measured at Newport, and the Okanogan at Tonasket have subnormal flows. Record flows were not experienced this month; but just generally high outflows as a result of above normal precipitation. Forecasts of water supply, as stated above, have not been drastically changed from that reported last month. On the mainstem of the Columbia, the forecasts range from 96 percent of normal - as measured at Birchbank; to 77 percent for the Columbia River at The Dalles. The Okanogan River System is now expected to outflow 66 and 67 percent of normal, which is a reduction from that reported last month. The Chelan River forecast has been increased 5 percent from last month's report; the Wenatchee has been improved 2 percent; and the Yakima, as measured at Parker, has been increased one percentage point. As stated before, very little change is forecast. We still need above normal precipitation, especially in the form of snow at the higher elevations, to maintain these forecast percentage points. If we do not get good rainfall, and the temperature remains warm, we will have to reduce these forecasts to what could be dangerously low figures. Numerical forecasts can be found following this narrative.

STREAMFLOW FORECASTS - FEBRUARY, 1981

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1980 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1981	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-yr. Avg.	Fore- cast period	1980	1979	1978	15-yr. Average 63-77
<u>COLUMBIA BASIN</u>							
<u>COLUMBIA RIVER SYSTEM</u>							
Columbia River	43600	96	Apr-Sept	40816	34484	44008	45502
at Birchbank <u>1/</u>	34900	96	Apr-July	34085	27181	34030	36353
	25100	96	Apr-June	27623	19661	24082	26194
Columbia River	57800	85	Apr-Sept	61016	52769	66868	68012
at Grand Coulee <u>1/</u>	48500	85	Apr-July	52320	44096	54559	57035
	37600	85	Apr-June	43871	35138	41585	44273
Columbia River	63400	86	Apr-Sept	66512	55298	72892	73935
bl. Rock Island Dam <u>1/</u>	53700	86	Apr-July	57767	46700	60163	62462
	41700	86	Apr-June	48667	37453	46242	48489
Columbia River	79800	77	Apr-Sept	93170	76843	101055	103493
at The Dalles, OR <u>1/</u>	68000	77	Apr-July	79931	65758	84815	88519
	54800	77	Apr-June	68316	55016	67353	71237
<u>PEND OREILLE RIVER SYSTEM</u>							
Pend Oreille River	10300	65	Apr-Sept	13271	11639	15581	15950
bl. Box Canyon	9550	65	Apr-July	12116	11095	14080	14690
	7640	65	Apr-June	10776	10217	11750	11760
<u>KETTLE RIVER SYSTEM</u>							
Kettle River	1600	87	Apr-Sept	1835	1265	2056	1846
nr. Laurier	1550	88	Apr-July	1747	1211	1877	1754
	1400	88	Apr-June	1603	1137	1686	1588
Colville River	105	78	Apr-Sept	116	63	138	134
at Kettle Falls	95	77	Apr-July	105	58	125	123
	90	78	Apr-June	97	55	117	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1981	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore	15-Yr.			
		15-yr. Avg.	cast period	1980	1979	1978	Average 63-77
<u>SPOKANE RIVER SYSTEM **</u>							
Spokane River	1500	52	Apr-Sept	2214	2809	2427	2910
at Post Falls, ID <u>2/</u>	1400	51	Apr-July	2046	2757	2330	2733
	1300	50	Apr-June	1904	2678	2119	2600
<u>OKANOGAN RIVER SYSTEM</u>							
Similkameen River	1000	66	Apr-Sept	1476	870	1505	1517
nr. Nighthawk	950	67	Apr-July	1388	809	1365	1417
	810	68	Apr-June	1245	726	1170	1192
Okanogan River	1150	67	Apr-Sept	1551	911	1690	1719
nr. Tonasket	1070	68	Apr-July	1423	830	1500	1565
	900	69	Apr-June	1240	738	1286	1305
<u>METHOW RIVER SYSTEM</u>							
Methow River	810	80	Apr-Sept	996	478	1174	1011
nr. Pateros	750	80	Apr-July	934	432	1058	937
	630	80	Apr-June	811	382	876	791
<u>CHELAN RIVER SYSTEM</u>							
Chelan River	1100	89	Apr-Sept	1113	753	1335	1237
at Chelan <u>3/</u>	960	89	Apr-July	1014	663	1164	1080
	750	89	Apr-June	854	553	906	834
Stehekin River	760	86	Apr-Sept		566	888	883
at Stehekin	650	87	Apr-July		477	750	744
	490	88	Apr-June		387	563	557
Entiat River	230	95	Apr-Sept		134	295	241
nr. Ardenvoir	210	96	Apr-July		120	268	218
	165	95	Apr-June		104	275	174
<u>WENATCHEE RIVER SYSTEM</u>							
Wenatchee River	1130	87	Apr-Sept		893	1311	1297
at Plain	1000	87	Apr-July		812	1171	1156
	790	88	Apr-June		704	945	903
Wenatchee River	1510	85	Apr-Sept	1516	1204	1755	1767
at Peshastin	1410	89	Apr-July	1399	1110	1576	1587
	1150	92	Apr-June	1208	969	1275	1250
Stemilt Basin	106*	77	May-Sept				138*
nr. Wenatchee							
Icicle Creek	295	80	Apr-Sept				371
nr. Leavenworth	285	83	Apr-July				342
	240	86	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1981	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-yr.			
		15-yr. Avg.	cast period	1980	1979	1978	15-yr. Average 63-77
<u>YAKIMA RIVER SYSTEM</u>							
Yakima River	100	69	Apr-Sept	115	124	114	145
nr. Martin <u>4/</u>	90	68	Apr-July	103	114	101	133
	80	70	Apr-June	95	101	93	114
Yakima River	680	70	Apr-Sept	792	714	808	975
at Cle Elum <u>5/</u>	625	71	Apr-July	716	683	696	883
	540	72	Apr-June	646	599	614	751
Yakima River	1500	69	Apr-Sept	1833	1388	1977	2168
nr. Parker <u>6/</u>	1300	67	Apr-July	1733	1287	1691	1954
	1100	65	Apr-June	1610	1179	1487	1693
Kachess River	85	67	Apr-Sept	111	101	98	126
nr. Easton <u>7/</u>	80	67	Apr-July	105	95	91	119
	75	71	Apr-June	91	88	84	104
Cle Elum River	360	75	Apr-Sept		348	417	479
nr. Roslyn <u>8/</u>	330	76	Apr-July	350	326	372	435
	275	77	Apr-June	314	292	318	358
Bumping River	100	68	Apr-Sept	129	99	119	146
nr. Nile <u>9/</u>	90	68	Apr-July	120	92	108	133
	75	71	Apr-June	111	82	93	106
American River	85	67	Apr-Sept			111	127
nr. Nile	75	65	Apr-July			93	116
	65	68	Apr-June			84	95
Tieton River	180	71	Apr-Sept	224	179	228	252
at Tieton Dam <u>10/</u>	150	71	Apr-July	192	148	188	212
	125	74	Apr-June	166	120	148	168
Naches River	610	68	Apr-Sept	729	574	721	894
nr. Naches <u>11/</u>	550	68	Apr-July	694	528	657	807
	450	66	Apr-June	638	478	564	680
Ahtanum Creek	35	74	Apr-Sept			48	47
nr. Tampico <u>12/</u>	30	71	Apr-July			43	42
	26	70	Apr-June			37	37

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1981	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-yr. Avg.	Fore- cast period	1980	1979	1978	15-yr. Average 63-77
<u>LOWER COLUMBIA RIVER SYSTEM</u>							
Mill Creek	10.50	60	Apr-Sept			12.11	17.50
at Walla Walla	10.00	58	Apr-July			11.99	17.33
	10.00	58	Apr-June			11.91	17.15
Lewis River	950	73	Apr-Sept	1001	974	904	1301
at Ariel <u>13/</u>	770	68	Apr-July	883	839	610	1131
	700	70	Apr-June	798	755	515	995
Cowlitz River							
bl. Mayfield Dam	1590	75	Apr-Sept	1626		1635	2125
	1390	75	Apr-July	1432		1348	1853
	1150	74	Apr-June	1275		1150	1552
Cowlitz River	2080	75	Apr-Sept	1976	1985	2232	2767
at Castle Rock <u>14/</u>	1800	75	Apr-July	1852	1746	1835	2401
	1520	75	Apr-June	1649	1537	1581	2028
<u>OLYMPIC PENINSULA</u>							
<u>DUNGENESS RIVER SYSTEM</u>							
Dungeness River	120	75	Apr-Sept			152	160
nr. Sequim	100	77	Apr-July			115	130
	75	78	Apr-June			83	96
<u>PUGET SOUND</u>							
<u>SKAGIT RIVER SYSTEM</u>							
Skagit River	1900	80	Mar-Aug			2110	2376
at Newhalem <u>15/</u>	1710	73	Apr-Sept		1648	2115	2356
	1400	71	Apr-July		1359	1690	1972
	1100	74	Apr-June		1102	1285	1485
<u>GREEN RIVER SYSTEM</u>							
Green River	300	78	Mar-Sept			252	387
bl. Howard Hanson Dam <u>16/</u>							
<u>CEDAR RIVER SYSTEM</u>							
Cedar River							
nr. Cedar Falls	60	64	Apr-Sept				93
<u>ELWHA RIVER SYSTEM</u>							
Elwha River	300	54	Apr-Sept			458	553
nr. Port Angeles	240	53	Apr-July			351	454

- 13/ Observed flow corrected for storage in Lake Merwin, Yale and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE ^{1/} CAPACITY	1981	Measured March 1		
STREAM				1980	1979	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	217.5	79.5	70.5	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	4813.9	2209.6	2912.8	2681.2
Columbia	Banks Lake	714.9	538.0	701.5	690.8	621.3
Okanogan	Conconully Reservoir	13.0	7.8	3.5	10.0	6.7
Okanogan	Conconully Lake	10.5	10.4	8.3	10.5	7.5
Chelan	Lake Chelan	676.1	437.3	168.4	198.1	235.5
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	143.4	78.3	78.2	105.4
Kachess	Kachess Lake	239.0	204.1	76.9	187.9	183.0
Cle Elum	Lake Cle Elum	436.9	267.3	363.3	80.0	280.2
Bumping	Bumping Lake	33.7	32.5	15.8	8.3	8.7
Tieton	Rimrock Lake	198.0	197.5	68.4	146.4	125.3
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	1287.6	627.2	636.1	894.0
Skagit	Diablo Reservoir	90.6	85.2	85.0	85.0	85.2
Skagit	Gorge Reservoir	9.8	8.0	7.5	8.0	8.1

^{1/} Based on Active Storage

* 15-yr. Average 1963-1977

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about March 1, 1981, as percent of the same date in 1980 and 1979 and average of record. We have also added a comparison of 1977 data with average for your information, since 1977 was considered a low water year.

Tributary Basin	No. of Courses Average	1981 Snow Water Expressed as percent of			1977
		1980	1979	1963-77 Avg.	as percent of Average

UPPER COLUMBIA BASIN

Pend Oreille	15	67	54	49	32
Kettle	14	89	81	66	41
Colville	3	30	26	23	19
Spokane	11	71	45	42	31
Okanogan	40	91	107	69	36
Methow	8	87	157	77	15
Chelan	6	80	91	72	31
Entiat	10	82	102	67	28
Wenatchee	9	45	39	37	20
Yakima	24	44	46	38	11
Ahtanum	2	44	64	52	12

LOWER COLUMBIA BASIN

Mill Creek	1	-	-	44	9
Cowlitz	2	42	38	32	12

PUGET SOUND

White	3	61	62	49	15
Green	7	36	26	21	8
Cedar	7	No Snow			4
Snoqualmie	2	30	11	10	8
Skykomish	2	43	23	23	17
Skagit	10	63	62	44	24
Baker	8	61	45	34	25
Nooksack	4	35	60	45	44

OLYMPIC PENINSULA

Morse	1	41	32	24	-
Elwha	1	27	10	9	10
Dungeness	1	44	28	26	9

PRECIPITATION 1/
Division Average Observations and Departures

Drainage Divisions	FALL		WINTER	
	Sept-Oct Observed	1980 <u>2/</u> Departure	Nov. 1980 Observed	Jan. 1981 Departure
Columbia in Canada	3.76	-1.26	13.21	-0.35
Pend Oreille - Spokane	2.75	-1.29	13.62	-1.40
Northeastern Washington	2.37	-0.11	7.56	-0.55
Southeastern Washington	2.33	-0.18	9.10	+0.33
Central Washington	1.60	+0.63	5.05	+0.47
North Central Washington	1.45	-0.14	6.29	+0.51
Northwest Slope Cascades	7.35	-5.86	46.67	-0.43
Southwest Slope Cascades	3.89	-4.79	34.12	-1.36

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages.
Central Washington	- Yakima, Wenatchee, and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

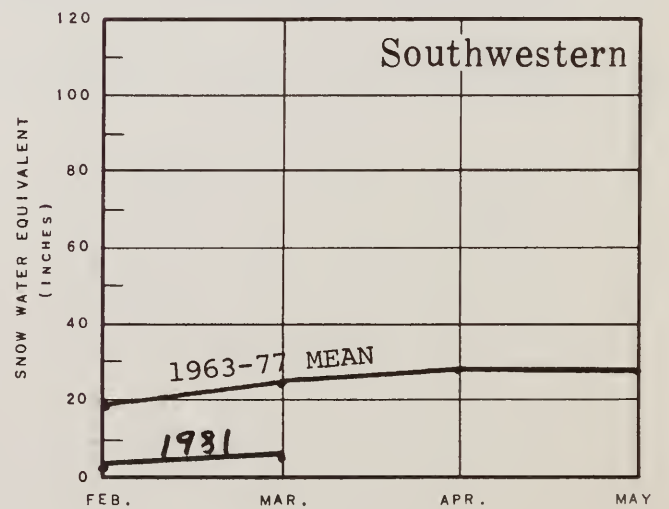
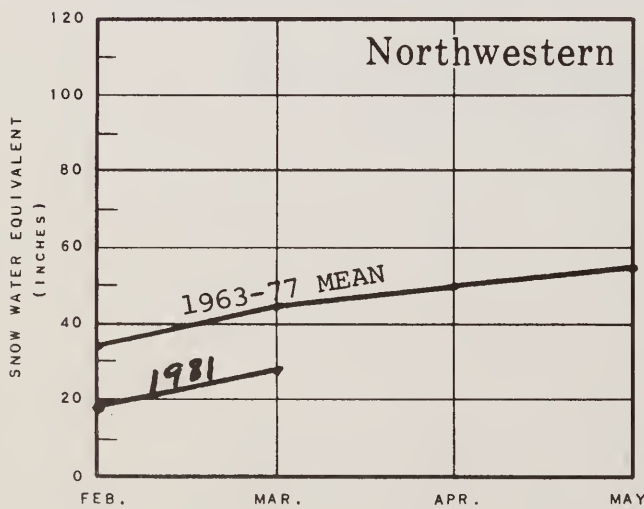
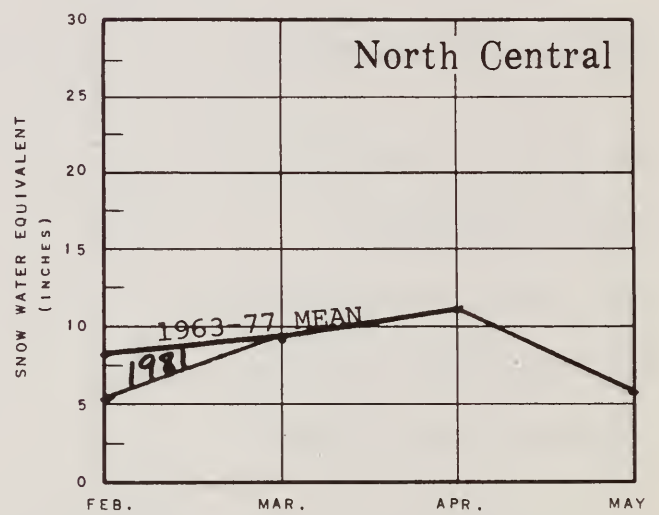
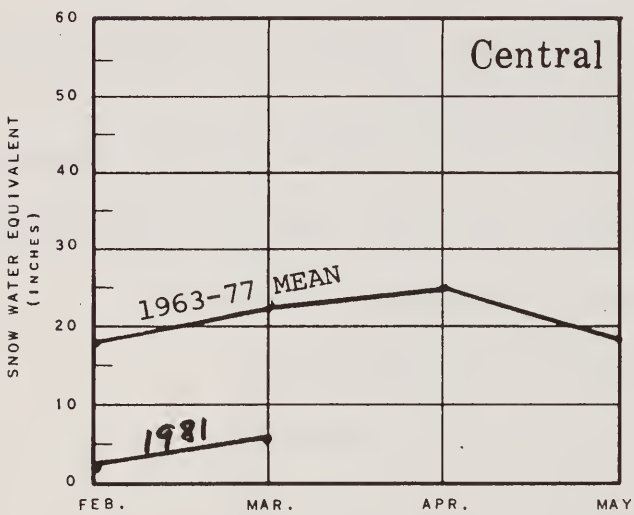
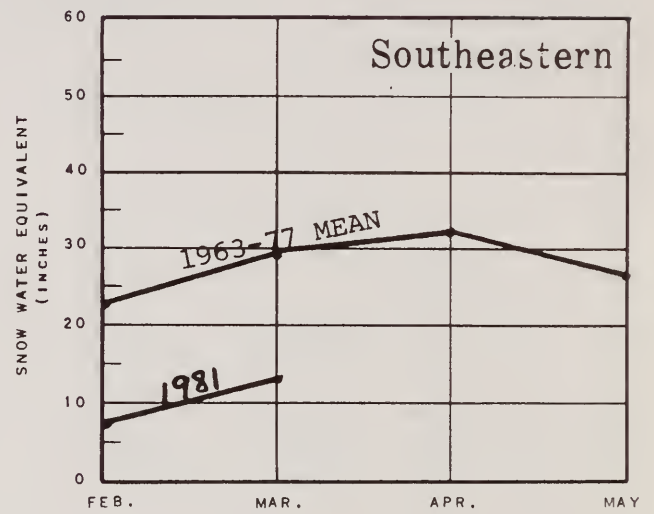
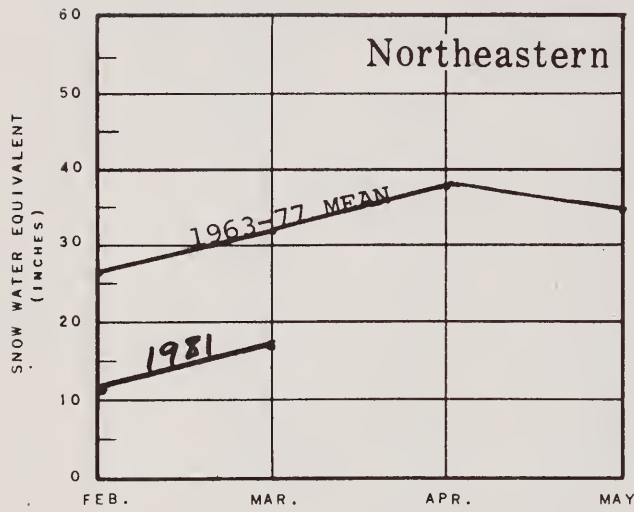
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1981

DRAINAGE AREAS

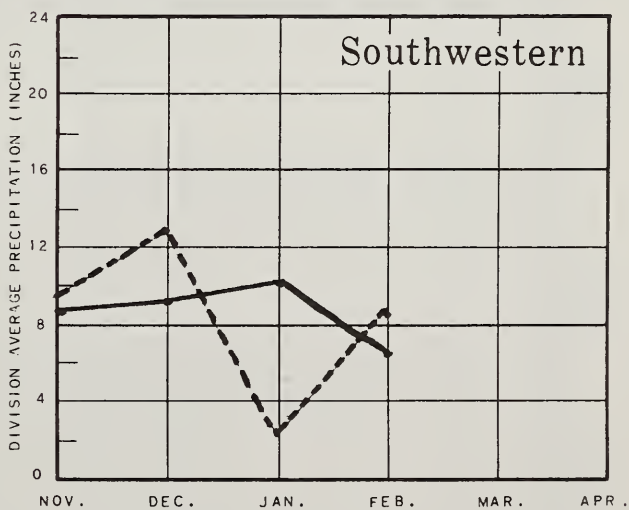
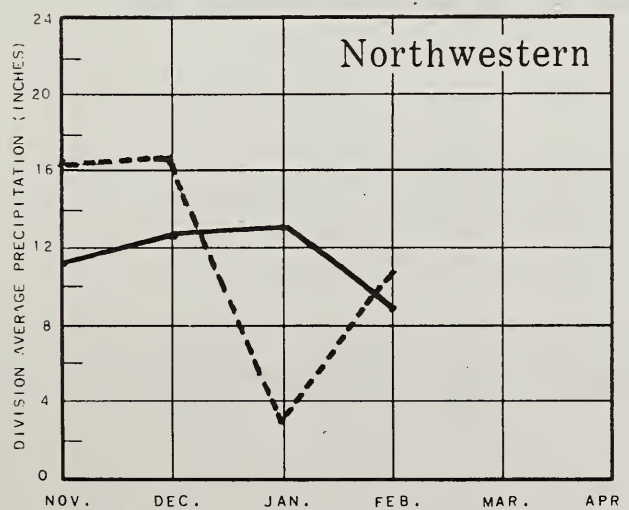
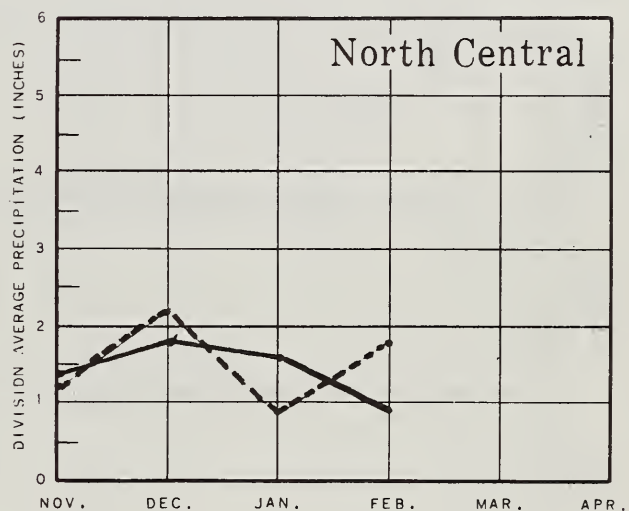
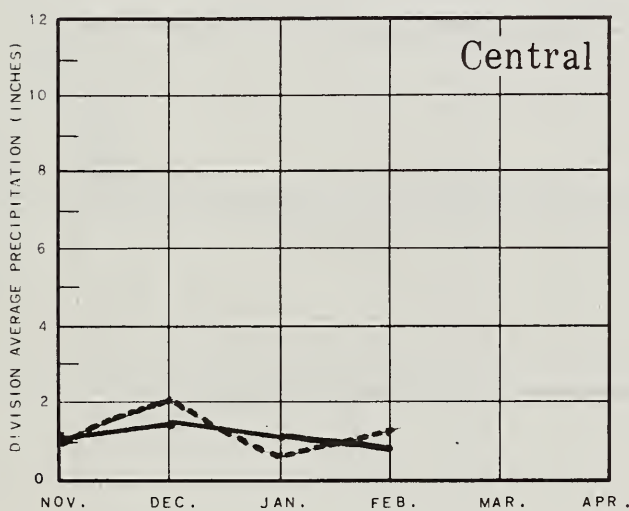
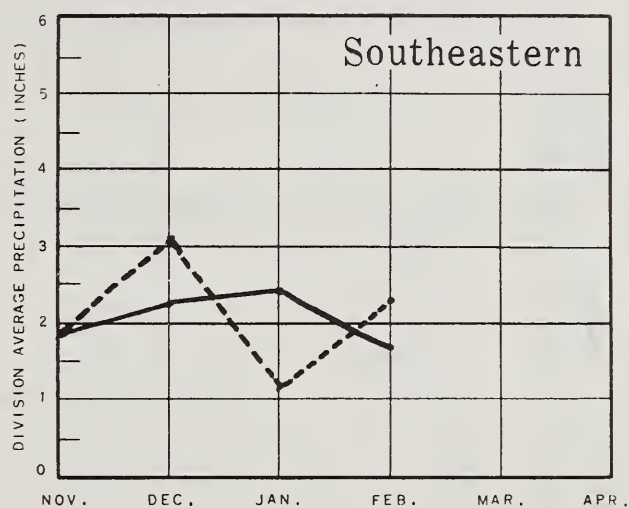
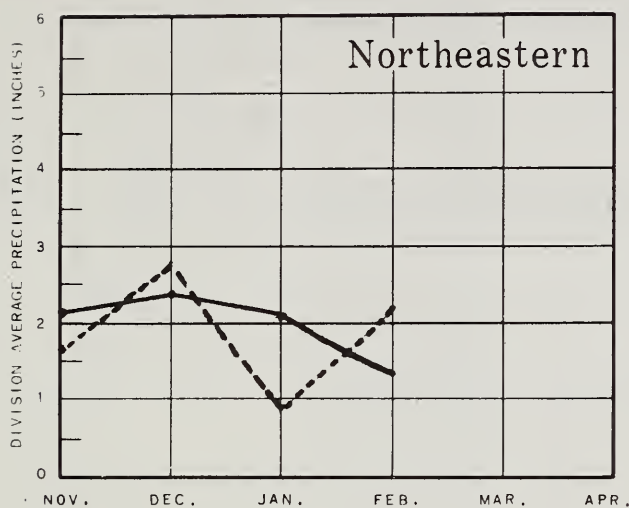


Selected Snow Survey Courses by Soil Conservation Service

WASHINGTON VALLEY PRECIPITATION

1981

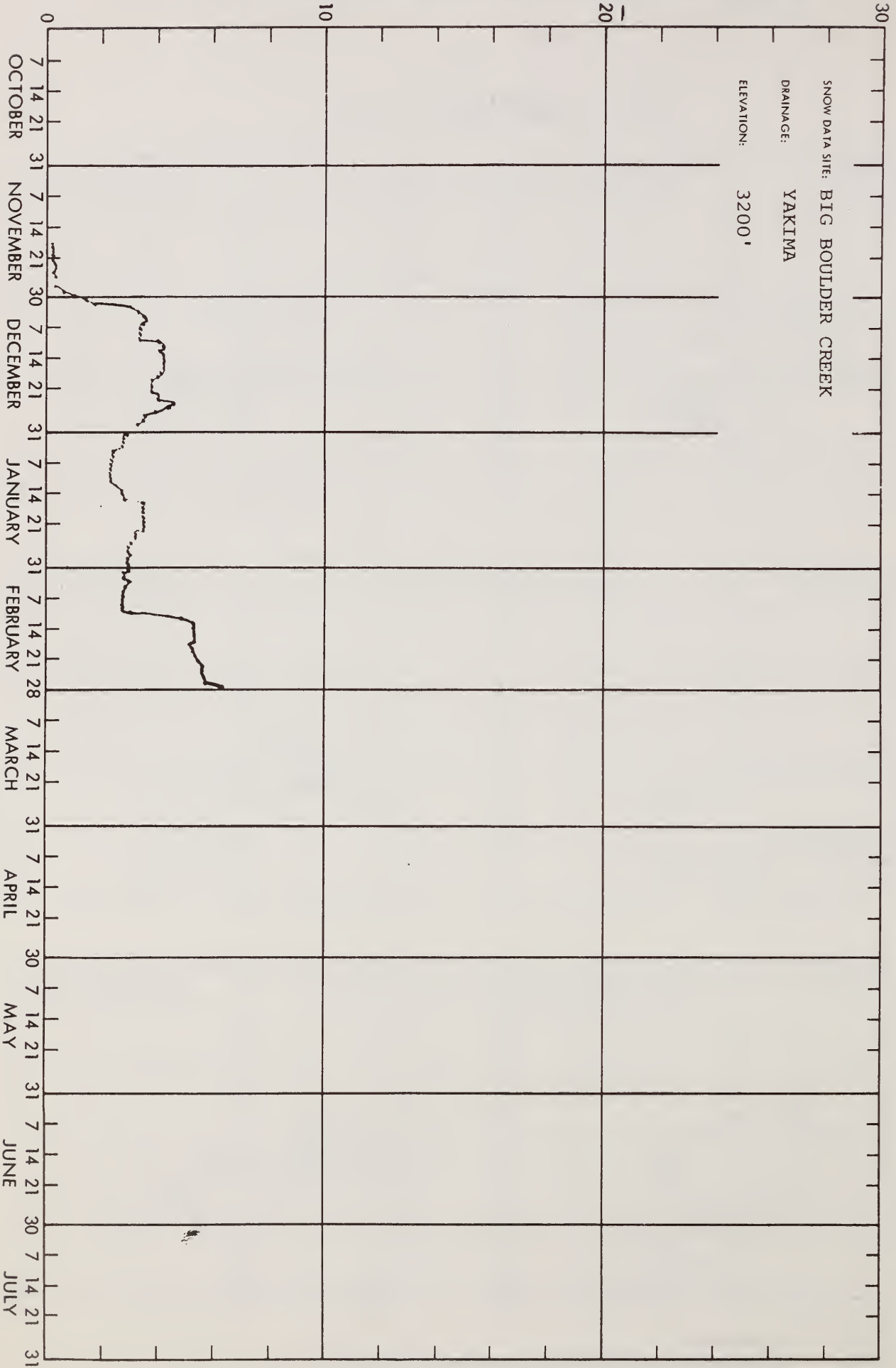
DRAINAGE AREAS



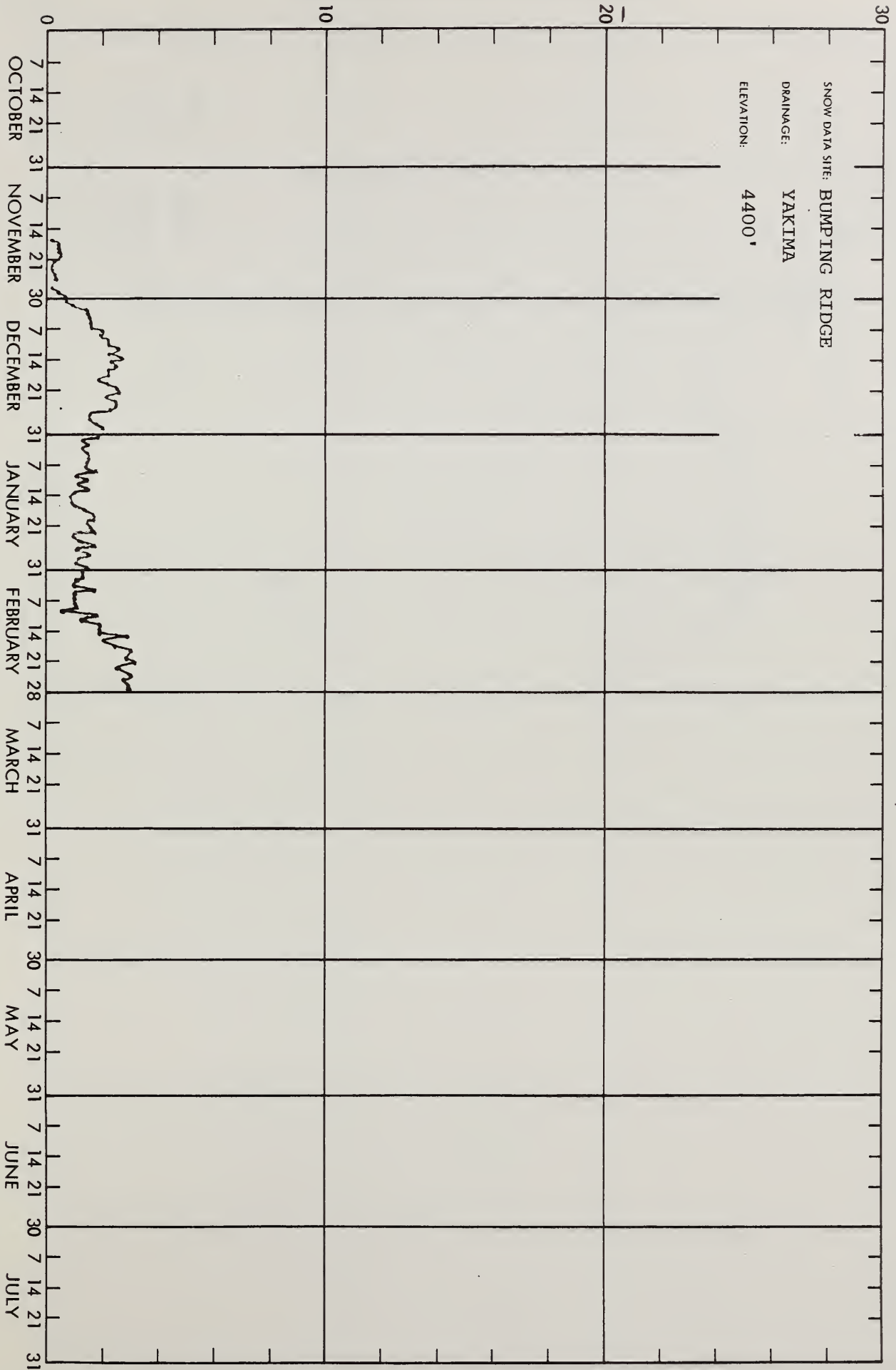
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1981 : - - -

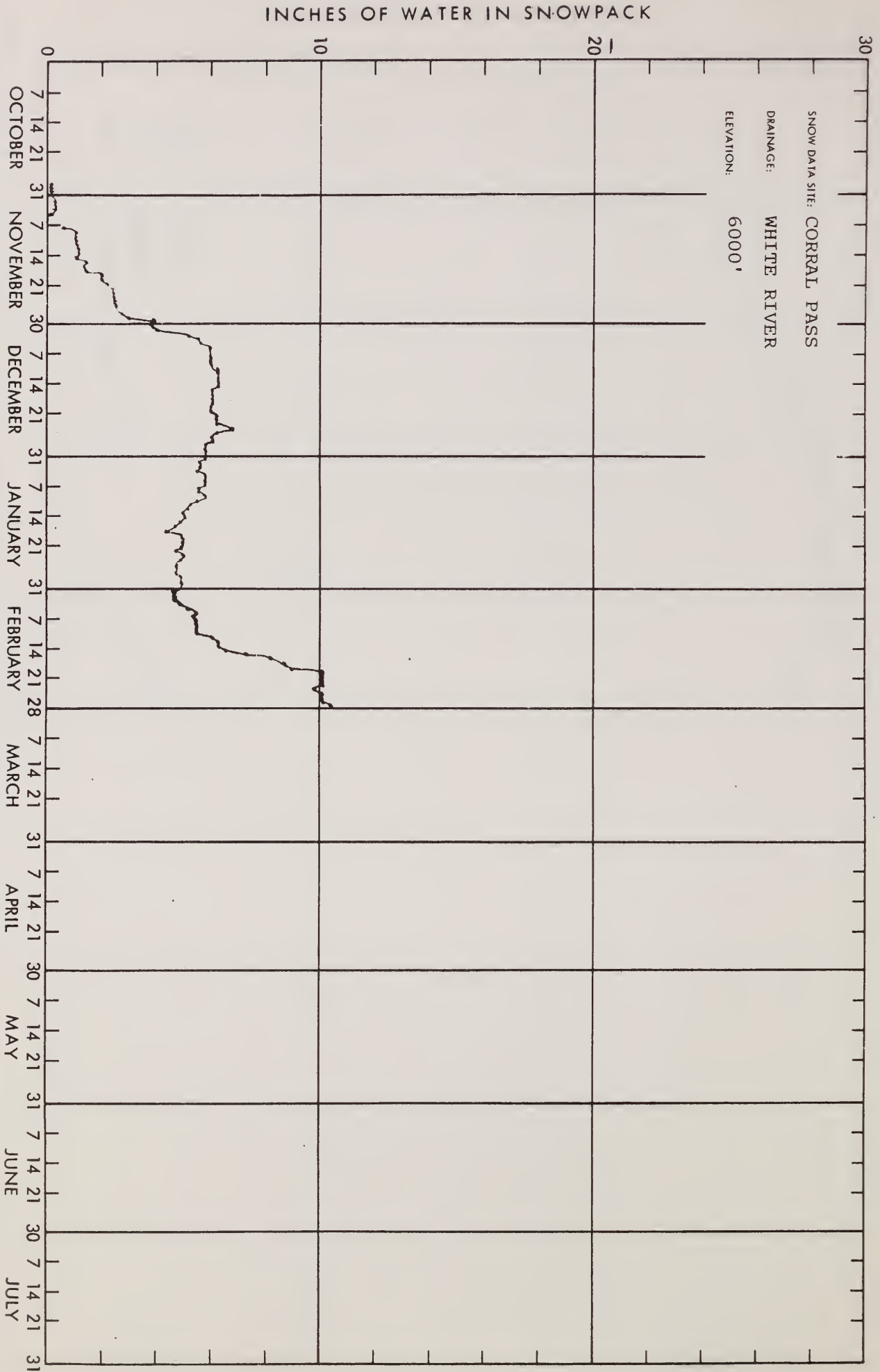
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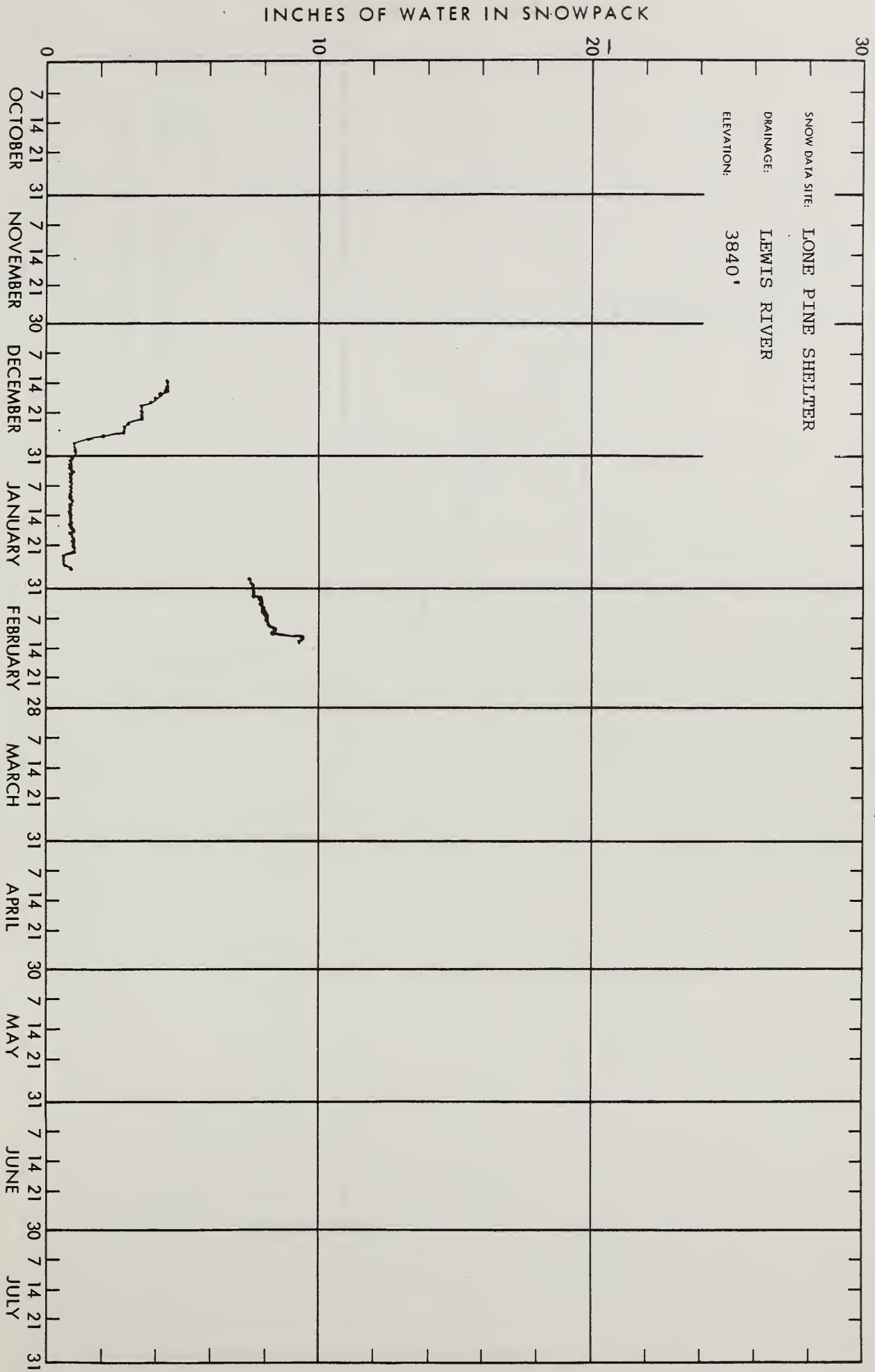
INCHES OF WATER IN SNOWPACK



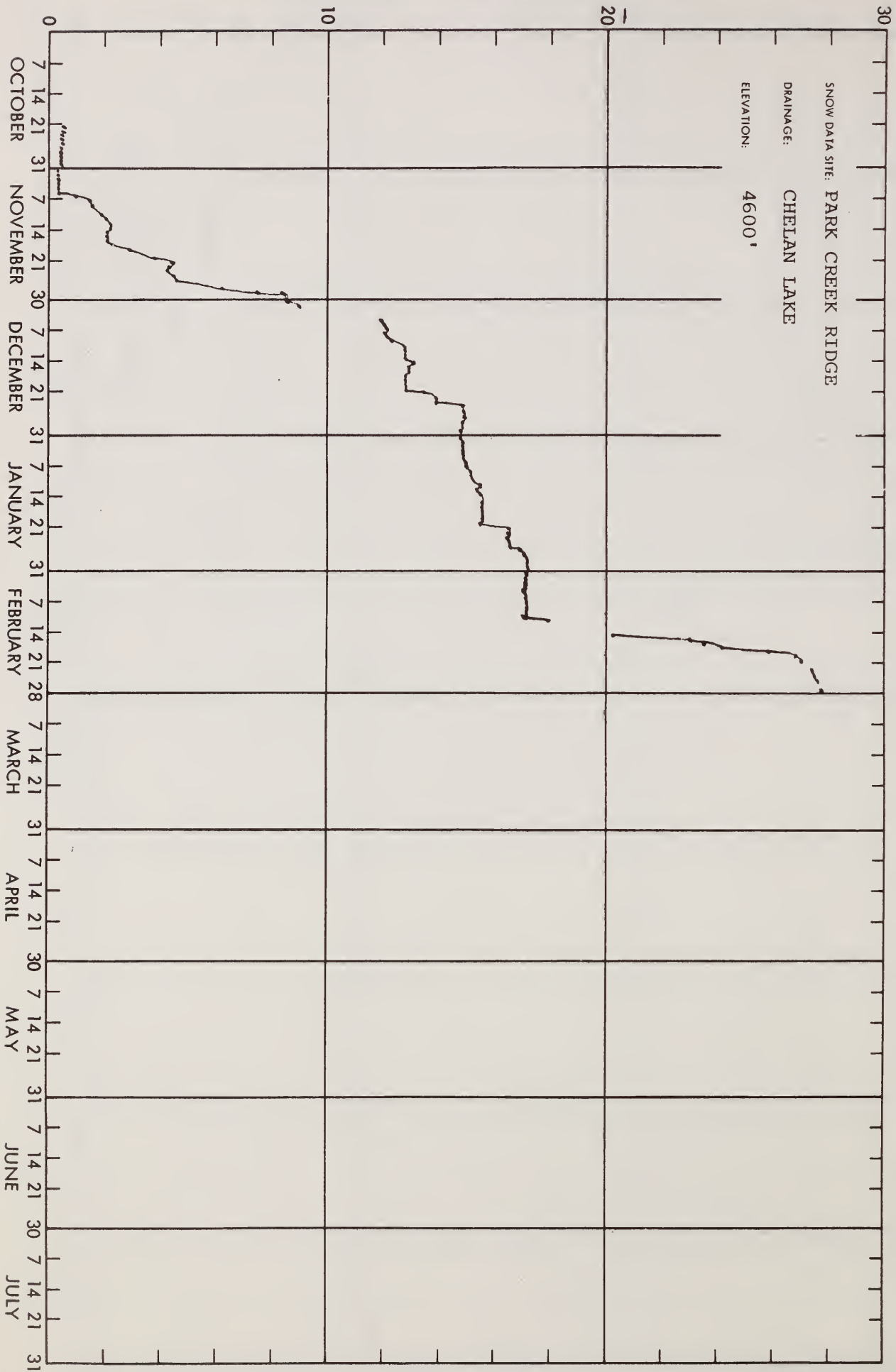
INCHES OF WATER IN SNOWPACK

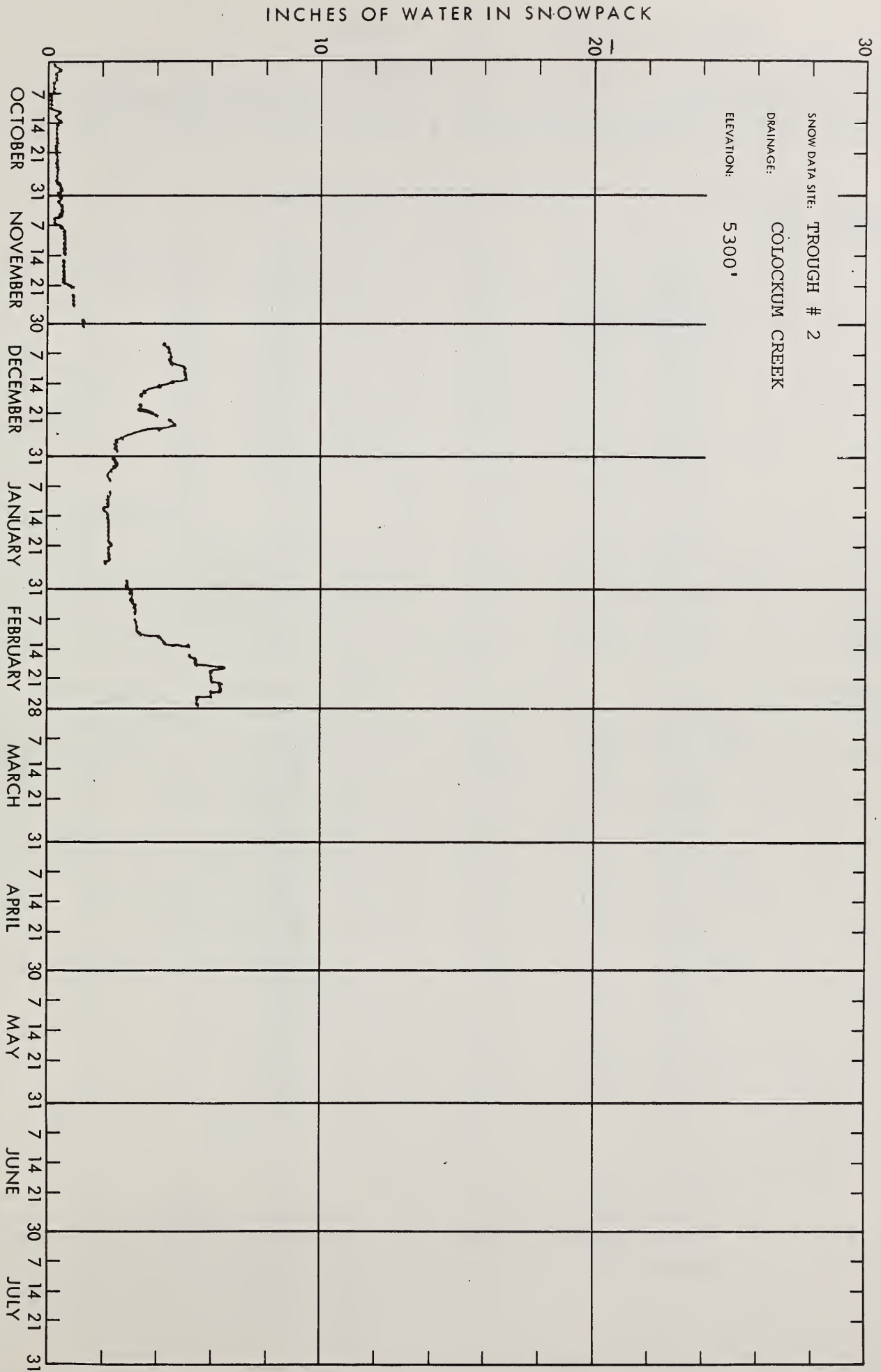






INCHES OF WATER IN SNOWPACK





SNOW DATA TO MARCH 1, 1981 - APPENDIX 1

SNOW

SNOW			THIS YEAR			PAST RECORD		Avg. #
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		
NAME	Number	Elevation				Last Year	1977	

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	2/27	69	26.0	27.4	19.5	43.8
Baree Midway	15B16	4600	2/27	47	14.8	21.4	16.5	34.0
Baree Trail	15B15	3800	2/27	4	0.5	4.8	1.0	10.0
Benton Meadow	16A02	2344	2/28	0	0.0	4.8	1.6	6.4
Benton Spring	16A03	4900	2/28	26	8.8	12.6	4.1	17.7
Boyer Mountain	17A02	5250	2/26	40	13.8	16.9	4.3	23.1
Brush Creek Timber	14A13	5000	2/26	17	4.5	5.9	3.4	9.5
Chewelah	17A04	4923	2/28	22	6.6	10.4	3.9	14.3
Heart Lake Trail	14C10	4800	2/26	26	7.6	14.1	6.7	21.1
Hoodoo Basin	15C10	6000	2/26	87	30.6	37.2	14.8	45.4
Hoodoo Creek	15C01	5900	2/26	79	25.8	34.5	12.2	42.0
Lookout	15B02	5250	2/27	49	16.6	20.6	10.0	31.0
Mosquito Ridge	16A04A	5100	2/25	66	23.3	24.1	-	34.6
Nelson	2D04-Can	3050	2/25	25	9.0	12.7	5.5	14.4*
Schweitzer Bowl	16A06	4500		Plowed Out		21.1	8.2	28.1
Schweitzer Ridge	16A05	6100	3/2	75	29.2	42.8	11.5	40.3
Winchester Creek	17A03	2970	2/25	1.3	0.4	8.0	2.0	10.6

KETTLE RIVER

Barnes Creek	2B06-Can	5300	2/26	45	13.5	9.9	12.4	17.5*
Big White Mtn.	2E03-Can	5500	2/28	49	13.6	14.3	8.4	17.2*
Boulder Road	18A02	1450	2/26	0	0.0	3.5	0.8	4.5
Butte Creek	18A03	4070	2/26	23	5.3	7.8	3.4	8.5
Cabin Creek	18A08	3170	2/26	21	5.8	6.0	2.5	7.2
Carmi	2E02-Can	4100	2/28	16	3.7	4.3	2.5	6.2*
Farron # 1	2B02-Can	4000	2/26	34	9.4	10.8	3.2	12.2*
Farron # 2	2B02A-Can	4000	2/26	35	9.8	12.0	3.1	11.6*
Goat Creek	18A04	3595	2/26	14	4.6	6.0	2.9	6.5
Graystoke Lake	2F04-Can	5950	2/27	27	5.8	8.5	6.9	15.0*
Monashee Pass	2E01-Can	4500	2/26	31	9.6	5.9	8.8	12.5*
Snow Caps Creek	18A05	2150	2/26	0	0.0	3.8	1.2	4.8
Snow Caps Trail	18A06	2720	2/26	11	3.6	5.4	2.5	5.8
Summit G.S.	18A07	4600	2/26	16	4.1	4.8	2.5	7.3
Trapping Creek Lower	2E05-Can	3050	2/28	5.5	1.7	4.3	2.3	5.4*
Trapping Creek Upper	2E04-Can	4450	2/28	24	6.3	6.9	5.1	9.3*

COLVILLE RIVER

Baird	17A06	3215	2/28	Trace		4.8	2.9	6.7
Carlson	18A09	2885	2/28	0	0.0	2.6	0.0	4.2
Chewelah	17A04	4925	2/28	22	6.6	10.4	3.9	14.3
Stranger Mountain	17A05	4990	2/28	11	2.0	9.6	1.9	12.5
Togo	18A10	3370	2/28	3.5	0.6	8.9	1.2	10.8

Average based on 1963-77 average

* Average for years of record

SNOW DATA TO MARCH 1, 1981 - APPENDIX 2

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Avg. #
NAME	Number	Elevation				Last Year	1977	

SPOKANE RIVER

Above Burke	15B08	6100	2/27	24	9.0	11.6	8.8	22.9
Copper Ridge	16B02	4800	2/25	21	7.6	11.2	7.8	25.1
Forty-nine Meadows	15B03	5000	2/27	38	11.9	14.9	-	27.2
Fourth of July Summit	16B03	3100	2/25	0	0.0	2.8	-	8.9
Kellogg Peak	16B05A	5560	2/25	23	8.9	19.6	-	28.2
Lookout	15B02	5250	2/27	49	16.6	20.6	10.0	31.0
Lost Lake	15B14A	6000	2/27	85	25.7	29.9	-	50.0
Lower Sands Creek	16B01	3400	2/25	12	4.1	8.4	6.2	17.5
Mosquito Ridge	16A04A	5110	2/25	66	23.3	24.1	-	34.6
Roland Summit	15B05A	5200	2/25	30	11.4	19.6	-	31.3
Sherwin	16C01	3200	2/25	7	2.6	5.8	3.5	13.3
Sunset	15B09A	5600	2/25	70	22.9	24.3	-	32.6

OKANOGAN RIVER

Aberdeen Lake	1F01A-Can	4300	2/27	11	3.1	4.3	3.4	6.1*
Blackwall Mountain	2G03-Can	6250	2/25	73	23.1	26.5	8.5	31.1*
Bouleau Lake	2F21-Can	4580	2/28	36	8.8	7.1	6.5	12.3*
Brenda Mine	2F18-Can	4800	2/25	34	7.7	9.0	5.5	12.6*
Brookmere	1C01-Can	3200	2/28	21	6.6	7.6	2.7	8.9*
Enderby	1F04-Can	6250	2/24	84	25.7	21.2	20.6	32.1*
Esperon Creek Lower	2F15-Can	4400	3/1	29	7.4	7.1	3.5	10.6*
Esperon Creek Middle	2F14-Can	4700	3/1	33	9.1	9.4	5.2	13.2*
Esperon Creek Upper	2F13-Can	5400	3/1	37	10.7	9.9	6.2	16.0*
Graystoke Lake	2F04-Can	5950	2/27	27	5.8	8.5	6.9	15.0*
Hamilton Hill	2G06-Can	4900	2/27	33	9.4	12.2	5.0	14.4*
Harts Pass	20A05A	6500	2/27	96	27.9	33.5	12.3	41.1
Horseshoe Basin +	19A05a	7000	3/2	48	13.4	11.9	-	16.3
Isintok Lake	2F11-Can	5510	2/28	14	2.8	4.7	2.1	7.6*
Lost Horse Mountain	2B04-Can	6300	3/1	26	5.7	7.2	3.8	8.5*
Loup Loup	19A07	4650	2/25	29	7.1	10.4	0.4	8.8
McCulloch	2F03-Can	4200	2/26	29	9.8	5.0	3.4	6.4*
Missezula Mountain	2G05-Can	5100	2/25	17	4.3	7.6	3.0	9.1*
Mission Creek	2F05-Can	6000	2/27	39	10.9	10.9	10.5	17.3*
Monashee Pass	2E01-Can	4500	2/26	31	9.6	5.9	8.8	12.5*
Mount Kobau	2F12-Can	5950	2/28	39	8.5	9.0	2.4	10.7*
Muckamuck +	19A09a	6390	3/2	59	16.5	11.0	3.0	14.7
Mutton Creek No. 1	19A01	5700	2/26	40	9.7	10.9	0.0	12.7
Mutton Creek No. 2 SP	19A11	6000	2/26	-	4.6	8.6	0.0	10.0
1/Sunday Summit	2G01A-Can	4300	2/26	10	2.0	4.6	1.2	5.8*
2/Grayback Reservoir	2F08-Can	5225	2/27	23	4.8	5.9	3.6	8.0*

Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

1/ Formerly New Copper Mountain

2/ Formerly New Penticton Res. #2

SNOW DATA TO MARCH 1, 1981 - APPENDIX 3

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Avg. #
NAME	Number	Elevation				Last Year	1977	

OKANOGAN RIVER (Cont.)

Nickel Plate Mtn.	2G02-Can	6200	2/27	14	3.0	7.2	4.7	7.3*
Oyama Lake	2F19-Can	4400	2/27	13	2.9	4.6	3.7	6.6*
Paysayten +	20A28a	4300	3/2	30	9.0	13.2	6.9	16.9
Postill Lake	2F07-Can	4500	2/27	23	5.3	4.6	4.9	7.5*
1/Lightning Lake	3D02-Can	4000	2/26	17	4.7	9.1	2.0	10.6*
Rusty Creek	19A03	4000	2/25	24	6.2	6.2	0.0	6.6
Salmon Meadows	19A02	4500	2/26	40	9.6	9.3	0.0	9.4
Silver Star Mountain	2F10-Can	6050	2/28	57	16.8	17.3	14.3	24.1*
Starvation Mtn +	19A10a	6750	3/2	66	18.5	16.2	6.0	17.5
Summerland Reservoir	2F02-Can	4200	2/28	21	5.5	6.8	3.8	9.0*
Touts Coulee	19A06	2845	2/26	14	3.7	3.3	0.3	3.5
Trout Creek	2F01-Can	4700	2/24	12	2.4	4.1	2.7	6.6*
Vaseux Creek	2F20-Can	4600	2/27	15	3.9	4.3	2.8	6.2*
White Rocks Mountain	2F09-Can	6000	2/26	43	11.7	14.1	7.1	19.6*

METHOW RIVER

Harts Pass	20A05A	6500	2/27	96	27.9	33.5	12.3	41.1
Horseshoe Basin +	19A05a	7000	3/2	48	13.4	11.9	-	16.3
Loup Loup	19A07	4650	2/25	29	7.1	10.4	0.4	8.8
Mutton Creek No. 1	19A01	5700	2/26	40	9.7	10.9	0.0	12.7
Mutton Creek No. 2 SP	19A11	6000	2/26	-	4.6	8.6	0.0	10.0
Rusty Creek	19A03	4000	2/25	24	6.2	6.2	0.0	6.6
Salmon Meadows	19A02	4500	2/26	40	9.6	9.3	0.0	9.4
War Creek Pass +	20A31a	6500	3/2	96	28.8	-	-	42.9

CHELAN LAKE BASIN

Cloudy Pass +	20A22a	6500	3/5	89	31.2	-	11.2	35.0
Little Meadows +	20A24a	5275	3/5	67	23.4	36.4	11.2	37.6
Lyman Lake	20A23A	5900	3/5	108	39.6	45.8	19.7	49.8
Park Creek Ridge	20A12A	4600	3/5	74	26.1	39.8	11.0	44.2
Rainy Pass	20A09	4780	2/25	78	23.0	28.8	12.3	37.0
War Creek Pass +	20A31a	6500	3/2	96	28.8	-	-	42.9
Mirror Lake	20A39	5600	3/5	73	20.6	-	-	New

ENTIAT RIVER

Blue Creek G.S.	20B28a	5425	2/28	84	24.4	31.7	13.4	33.8
Brief	20B19	1600	2/21	0	0.0	7.8	0.0	7.5
Entiat Meadows +	20A33a	4540	2/28	98	28.4	35.6	14.7	57.7
Entiat River Trail +	20A34a	3325	2/28	52	17.7	20.3	10.6	25.6
Four Mile Ridge +	20B27a	6800	2/28	74	21.5	27.7	3.8	28.4
Fox Camp +	20A36a	6510	2/28	146	42.3	48.2	19.2	52.9
Pope Ridge	20B20	3540	2/26	32	10.7	14.8	2.1	18.2
Pugh Ridge +	20A32a	6725	2/28	97	28.1	32.0	7.4	40.8
Shady Pass	20A37	6200	2/25	60	17.6	21.8	4.4	23.7
Snow Brushy +	20A35a	3910	2/28	69	23.5	28.7	12.5	35.8
Tommy Creek +	20B21a	4900	2/28	50	14.5	17.2	3.2	26.5

Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

1/ Formerly Quartette Lake

SNOW DATA TO MARCH 1, 1981 - APPENDIX 4

SNOW

SNOW			THIS YEAR			PAST RECORD		
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Avg. #
NAME	Number	Elevation				Last Year	1977	
<u>WENATCHEE RIVER</u>								
Berne-Mill Creek	21B23	2925	2/13	37	9.0	21.3	2.8	24.5
			2/27	33	12.5	21.8	4.5	26.0
Berne-Mill Creek New SP	21B41	3240	2/27	19	6.9	21.1	2.9	24.0
Blewett Pass No. 2	20B02	4270	3/2	13	4.4	15.0	1.9	15.0
Chiwaukum G.S.	20B16	1810	2/13	27	5.6	10.2	2.7	11.0
			2/27	15	5.7	10.3	2.9	11.6
Fish Lake	21B04	3371	2/27	36	12.6	25.3	7.1	31.1
Lake Wenatchee	20B05	1970	2/13	28	5.4	11.4	3.2	13.5
			2/27	15	5.6	11.4	3.7	14.4
Leavenworth R.S.	20B17	1127	2/12	9.9	2.6	3.5	0.0	5.5
			3/1	0	0.0	5.3	0.0	4.4
Lyman Lake	20A23A	5900	3/5	108	39.6	45.8	19.7	49.8
Merritt	20B18	2140	2/13	31	4.3	12.1	2.5	15.5
			2/27	16	5.7	11.8	2.8	15.8
Stevens Pass	21B01	4070	2/13	39	10.4	33.9	6.8	43.5
			2/27	48	16.5	36.0	11.7	48.0
Stevens Pass Sand Shed	21B45	3700	2/13	28	4.7	23.8	2.6	32.1
			2/27	30	10.0	24.7	4.4	34.9
<u>SQUILCHUCK CREEK</u>								
Beehive Springs	20B03	4400	2/25	7.9	2.7	11.7	0.0	8.1
Scout-A-Vista	20B04	3400	2/25	13	4.8	10.8	0.0	8.2
<u>STEMILT CREEK</u>								
Jump-Off	20B08	4450	2/24	7.6	1.8	12.0	0.0	8.4
Stemilt Slide	20B06	5000	2/24	21	6.7	14.6	0.0	13.1
Upper Wheeler	20B07	4400	2/24	3.9	1.3	12.9	0.0	9.7
<u>COLOCKUM CREEK</u>								
Colockum Creek Upper	20B22	5300	2/24	11	3.6	9.6	0.0	13.3
Colockum Creek Lower	20B23	4300	2/24	12	3.5	13.0	0.0	10.1
Trough # 2	20B25SP	5310	2/24	18	6.0	-	0.0	New
<u>YAKIMA RIVER</u>								
Ahtanum R. S.	21C11	3100	2/25	5.1	3.1	10.7	0.5	6.7
Big Boulder Creek	21B09	3200	2/27	15	4.8	15.0	2.0	19.3
Blewett Pass No. 2	20B02	4270	3/2	13	4.4	15.0	1.9	15.0
Bumping Lake	21C08	3450	2/13	13	4.3	14.6	0.0	14.8
			2/26	9.4	3.3	16.7	0.0	20.4
Bumping Lake New	21C36	3400	2/13	20	6.1	18.0	0.0	18.5
			2/26	16	6.5	19.4	1.0	20.2
Cayuse Pass	21C06	5300	2/26	78	28.5	52.5	11.4	71.0
Colockum Pass	20B09	5370	2/24	20	6.6	16.1	0.0	14.2
Cooke Creek	20B10	4123	2/24	Trace		6.3	0.0	5.7
Corral Pass	21B13	6000	2/26	52	16.6	24.5	3.9	35.1
Fish Lake	21B04	3371	2/27	36	12.6	25.3	7.1	31.1

Average based on 1963-77 Average

SNOW DATA TO MARCH 1, 1981 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD		
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)		Avg. #
NAME	Number	Elevation				Last Year	1977	
YAKIMA RIVER (Cont.)								
Green Lake	21C10	6000	2/25	45	17.5	29.3	3.8	29.6
Grouse Camp	20B11	5385	2/25	26	8.6	17.8	1.2	15.5
High Creek	20B12	2930	2/25	7.6	2.5	7.7	0.0	6.1
Joe Lake +	21B46a	4624	2/28	73	25.9	37.4	18.0	53.5
Lake Cle Elum	21B14M	2200	2/11	9.6	2.0	6.5	0.0	9.2
			2/25	7.5	2.9	6.3	0.9	9.2
Lemah Creek +	21B47a	3327	2/28	45	15.9	31.5	6.0	41.9
Manashtash	20C01	3935	2/26	Trace		7.3	0.0	4.3
Morse Lake	21C17	5400	2/26	76	27.8	45.7	7.7	47.2
Nanum	20B13	3875	2/25	9.6	2.5	8.8	0.3	9.8
Olallie Meadows	21B02	3625	2/26	21	6.7	23.0	3.8	44.8
Satus Pass	20D01	4030	3/2	0	0.0	7.2	1.2	9.1
Stampede Pass SP	21B10	3860	2/17	24	8.9	30.7	4.0	36.2
			2/23	30	11.0	32.5	5.8	35.7
Trail Creek	20B14	3360	2/24	0	0.0	4.0	0.0	2.6
Tunnel Avenue	21B08	2450	2/11	13	3.0	17.4	0.0	19.9
			2/25	14	5.7	17.6	1.2	21.6
Van Epps Pass +	20B26a	5925	2/28	77	27.3	32.1	14.6	43.0
Walters Flat	20B15	3360	2/25	11	4.3	8.7	0.0	7.1
Waptus Lake +	21B49a	3024	2/28	45	15.9	22.6	8.0	41.4
White Pass (E. Side)	21C28	4500	2/12	13	3.5	16.6	0.0	21.0
			2/27	19	5.7	19.0	1.4	23.1
AHTANUM CREEK								
Ahtanum R. S.	21C11	3100	2/25	5.1	3.1	10.7	0.5	6.7
Green Lake	21C10	6000	2/25	45	17.5	29.3	3.8	29.6
LOWER COLUMBIA DRAINAGE								
ASOTIN CREEK								
Spruce Springs	17C04	5700	2/23	29	11.4	16.8	2.0	22.6
MILL CREEK								
Homestead	17C01	4030	2/25	Trace		7.1	0.0	8.2
Martin Springs	17C02	4400	2/25	Trace		9.6	0.5	12.1
High Ridge	18D19	4150	2/26	40	13.1	-	-	29.4
KLICKITAT RIVER								
Satus Pass	20D01	4030	3/2	0	0.0	7.2	1.2	9.1
COWLITZ RIVER								
Cayuse Pass	21C06	5300	2/26	78	28.5	52.5	11.4	71.0
Potato Hill	22C14	4500	2/25	19	5.8	-	-	27.0
Ryan Lake	22C08	3280	2/26	22	6.6	-	-	New
White Pass (E. Side)	21C28	4500	2/12	13	3.5	16.6	0.0	21.0
			2/27	19	5.7	19.0	1.4	23.1

Average based on 1963-77 average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MARCH 1, 1981 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		
NAME	Number	Elevation				Last Year	1977	Avg. #

PUGET SOUND DRAINAGE
WHITE RIVER

Cayuse Pass	21C06	5300	2/26	78	28.5	52.5	11.4	71.0
Corral Pass	21B13	6000	2/26	52	16.6	24.5	3.9	35.1
Morse Lake	21C17	5400	2/26	76	27.8	45.7	7.7	47.2

GREEN RIVER

Airstrip	21B24	1800	2/27	0	0.0	0.0	0.0	5.1
Charley Creek	21B25	1200	2/27	0	0.0	0.0	0.0	1.2
Cougar Mountain SP	21B42	3200	2/26	Trace		6.9	0.0	20.9
Grass Mtn. No. 2	21B27	2900	2/27	1.1	0.3	10.3	0.0	19.1
Grass Mtn. No. 3	21B28	2100	2/27	0	0.0	0.0	0.0	5.7
Lester Creek	21B29	3100	2/27	14	4.9	16.3	1.9	21.7
Lynn Lake	21B50	4000	2/27	7.8	3.6	5.1	0.3	18.7
Sawmill Ridge	21B31	4700	2/27	29	10.4	19.1	3.7	33.7
Snowshoe Butte SP	21B43	5000	2/26	41	14.1	41.0	5.6	52.7
Stampede Pass SP	21B10	3860	2/17	24	8.9	30.7	4.0	36.2
			2/23	30	11.0	32.5	5.8	35.7
Twin Camp	21B30	4100	2/27	10	3.8	15.9	0.3	22.3

CEDAR RIVER

City Cabin	21B03	2390	2/24	0	0.0	9.3	0.9	17.2
Mt. Gardner	21B21	3300	2/24	0	0.0	7.0	0.4	18.7
Mt. Lindsay	21B16	2500	2/24	0	0.0	7.9	0.6	15.1
Mt. Washington New	21B15	3000	2/24	0	0.0	0.0	0.5	8.8
Rex River	21B17	2400	2/24	0	0.0	8.6	0.6	12.7
S. F. Cedar	21B06	3000	2/24	0	0.0	9.3	0.3	19.7
Tinkham Creek	21B20	3400	2/24	0	0.0	16.6	0.8	22.9

SNOQUALMIE RIVER

Alpine Meadow	21B48	3500	2/27	16	4.4	14.2	4.1	41.2
Lake Elizabeth	21B19	2900	2/24	4.6	1.7	-	2.6	37.7
Olallie Meadows	21B02	3625	2/26	21	6.7	23.0	3.8	44.8
S. F. Tolt	21B18	1900	2/27	0	0.0	0.0	0.0	3.2

SKYKOMISH RIVER

Lake Elizabeth	21B19	2900	2/24	4.6	1.7	-	2.6	37.7
Stevens Pass	21B01	4070	2/13	39	10.4	33.9	6.8	43.5
			2/27	48	16.5	36.0	11.7	48.0
Stevens Pass Sand Shed	21B45	3700	2/13	28	4.7	23.8	2.6	32.1
			2/27	30	10.0	24.7	4.4	34.9

Average based on 1963-77 average

SNOW DATA TO MARCH 1, 1981 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD		
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)		Avg. #
NAME	Number	Elevation				Last Year	1977	
<u>SKAGIT RIVER</u>								
Beaver Creek Trail	21A04	2200	2/25	0	0.0	9.7	0.0	14.9
Beaver Pass	21A01	3680	2/25	19	6.2	20.1	1.2	28.7
Brown Top Ridge +	21A28a	6000	2/27	113	28.0	42.8	16.0	61.2
Cloudy Pass +	20A22a	6500	3/5	89	31.2	-	11.2	35.0
Devils Park	20A04	5900	2/26	87	28.1	29.8	12.6	41.3
Freezeout Creek Trail	20A01	3500	2/26	7.6	1.6	8.9	0.6	12.7
Freezeout Meadows New	20A38	5000	2/26	55	16.4	20.1	12.4	42.5
Granite Creek	21A29A	3500	2/26	25	7.5	13.0	4.7	19.2
Harts Pass	20A05A	6500	2/27	96	27.9	33.5	12.3	41.1
Klesilkwa	3D03A-Can	3700	2/27	0	0.0	5.6	0.3	12.4*
/Lightning Lake	3D02-Can	4000	2/26	17	4.7	9.1	2.0	10.6*
Lyman Lake	20A23A	5900	3/5	108	39.6	45.8	19.7	49.8
Meadow Cabins	20A08	1900	2/25	0	0.0	4.2	0.0	7.4
New Hozomeen Lake	21A30	2800	2/26	Trace		8.7	0.0	14.2
New Tashme	3D01A-Can	2500	2/27	0	0.0	5.9	1.5	11.1*
Rainy Pass	20A09	4780	2/25	78	23.0	28.8	12.3	37.0
Thunder Basin	20A07	4200	2/27	19	4.9	11.8	4.2	20.9

BAKER RIVER

Dock Butte	21A11A	3800	3/3	38	15.0	28.0	-	64.2
Easy Pass	21A07A	5200	3/3	93	37.0	48.0	18.8	71.3
Jasper Pass	21A06A	5400	3/3	108	43.0	50.0	23.0	82.5
Marten Lake	21A09A	3600	3/3	52	21.0	39.0	17.5	71.8
Mount Blum +	21A18a	5800	3/3	82	33.0	37.0	-	62.1
Panorama New	21A26	4300	2/28	42	17.3	48.8	14.0	66.0
Rocky Creek	21A12A	2100	3/3	0	0.0	13.0	-	30.4
Schreibers Meadow	21A10A	3400	3/3	8	3.0	26.0	10.0	54.5
S. F. Thunder Creek	21A14A	2200	3/3	0	0.0	0.0	-	11.7
Watson Lakes	21A08A	4500	3/3	52	21.0	27.0	-	60.9

NOOKSACK RIVER

Bald Mountain +	21A19a	4400	2/27	27	11.1	-	18.6	46.2
Canyon +	21A20a	5100	2/27	120	49.4	-	29.1	58.1
Panorama New	21A26	4300	2/28	42	17.3	48.8	14.0	66.0
Twin Lakes +	21A21a	5200	2/27	80	32.8	-	27.3	70.4

O L Y M P I C P E N I N S U L ADUNGENESS RIVER

Deer Park	23B04	5200	2/25	20	4.7	10.8	1.7	18.3
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MORSE CREEK

Cox Valley	23B14	4500	2/26	30	8.6	21.2	6.3	36.5
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ELWHA RIVER

Hurricane	23B03	4500	2/24	8.3	1.9	7.0	2.0	20.3
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Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

1/ Formerly Quartette Lake

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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with the Snow Survey"*